TSG-RAN Meeting #7
Madrid, Spain, 13 – 15 March 2000

RP-000044

Title: **Agreed CRs to TS 25.331 (2)**

Source: **TSG-RAN WG2**

Agenda item: **6.3.3**

Doc-1st-	Spec	CR	Rev	Subject	Cat	Version	Versio
R2-000098	25.331	148	1	Access control on RACH	C	3.1.0	3.2.0
R2-000258	25.331	149	2	cdma2000 Hard Handover	F	3.1.0	3.2.0
R2-000272	25.331	150	1	CPCH parameters with corrections	F	3.1.0	3.2.0
R2-000110	25.331	152		U-plane AM RLC reconfiguration by cell	F	3.1.0	3.2.0
R2-000654	25.331	154	3	CPCH	B	3.1.0	3.2.0
R2-000220	25.331	155	1	Information elements for ASC in TDD	C	3.1.0	3.2.0
R2-000120	25.331	156		Addition of timing advance value in	F	3.1.0	3.2.0
R2-000221	25.331	157	2	Physical channel description for TDD	C	3.1.0	3.2.0
R2-000123	25.331	159		Message contents for the intersystem	C	3.1.0	3.2.0
R2-000124	25.331	160		Corrections on use of PUSCH power	F	3.1.0	3.2.0
R2-000601	25.331	162	2	UE individual DRX cycles in CELL_PCH	F	3.1.0	3.2.0
R2-000152	25.331	163		Correction to Transport Format	F	3.1.0	3.2.0
R2-000587	25.331	164	3	Downlink outer loop power control	C	3.1.0	3.2.0
R2-000406	25.331	165	2	Redirection of RRC connection setup	B	3.1.0	3.2.0
R2-000603	25.331	166	2	Inter-frequency measurements in	B	3.1.0	3.2.0
R2-000192	25.331	167		List of found editorial mistakes in the	D	3.1.0	3.2.0
R2-000245	25.331	168	1	Transport block size	C	3.1.0	3.2.0
R2-000232	25.331	169	1	Cell Access Restriction	C	3.1.0	3.2.0
R2-000197	25.331	170		Editorial modification	D	3.1.0	3.2.0
R2-000198	25.331	171		Modification of DPCH info	D	3.1.0	3.2.0

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***Document* R2-000098**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.331	CR	148r1	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 17th Jan 2000

Subject: Access control on RACH

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	X
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: Alignment of RACH parameters with TS 25.321 and TS 25.214

Clauses affected: 10.1.47.5.7, 10.1. 47.5.8, 10.2.5.x(new), 10.2.6.5, 10.2.6.24, 10.2.6.25, 10.2.6.42

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:


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10.1.47.5.7 System Information Block type 5

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
PhyCH information elements				
Frequency info	O			
Maximum allowed UL TX power	O			
CHOICE *mode*				
>TDD				
>>Midamble configuration	O			The maximum number of midamble shifts for burst type 1: 4, 8 or 16. Default value is 8. The maximum number of midamble shifts for burst type 2: 3 or 6. Default value is 3.
>FDD				
>>Secondary CPICH info	O			Note 2
Primary CCPCH info	O			Note 1
PRACH information		1 .. <maxPRACHcount>		
>PRACH info	M			
>TFS	M			
>CHOICE *mode*				
>>FDD				
>>>PRACH partitioning	M			
>>>Primary CPICH DL TX power	M			
>>>Constant value	M			
>>>PRACH power offset	M			
>>>RACH transmission parameters (FDD)	M			
>>>AICH info	M			
>>TDD				
>>>ASC info	O			
Secondary CCPCH information		1 .. <maxSCCPCHcount>		
>Secondary CCPCH info	M			
>TFCS	M			For FACHs and PCH
>FACH/PCH information		1 .. <maxFACHcount>		
>>TFS				For each FACHs and PCH Note 3
>>CTCH indicator	M	Boolean		The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	C-Pich			
CBS DRX Level 1 information	C-CTCH			

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH(FDD only).

NOTE 2: This parameter is needed in case of using adaptive array antenna.

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

Condition	Explanation
CTCH	Present only when the IE "CTCH indicator" is equal to TRUE for at least one FACH.
Pich	PICH info is present only when PCH is multiplexed on Secondary CCPCH

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs
MaxSCCPCHcount	Maximum number of secondary CCPCHs
MaxFACHcount	Maximum number of FACHs mapped onto secondary CCPCHs
MaxPCHcount	Maximum number of PCHs mapped onto secondary CCPCHs
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.8 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common physical channels to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
PhyCH information elements				
Frequency info	O			
Maximum allowed UL TX power	O			
Primary CCPCH info	O			Note 1
CHOICE *mode*				
>FDD				
>>PICH Power offset	M			
>>AICH Power offset	M			
>>Secondary CPICH info	O			Note 2
PRACH information		0 .. <maxPRACHcount>		
>PRACH info	M			
>TFS	M			
>CHOICE *mode*				
>>FDD				
>>>PRACH partitioning	M			
>>>Primary CPICH DL TX power	M			
>>>Constant value	M			
>>>PRACH power offset	M			
>>>RACH transmission parameters (FDD)	M			
>>>AICH info	M			
Secondary CCPCH information		0 .. <maxSCCPCHcount>		
>Secondary CCPCH info	M			
>TFCS	M			For FACHs and PCH
>FACH/PCH information		1 .. <maxFACHcount>		
>>TFS				For each FACHs and PCH Note 3
>>CTCH indicator	M	Boolean		The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	C-Pich			
CBS DRX Level 1 information	C-CTCH			

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

NOTE 2: This parameter is needed in case of using adaptive array antenna.

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

Condition	Explanation
CTCH	Present only when the IE "CTCH indicator" is equal to TRUE for at least one FACH.
Pich	PICH info is present only when PCH is multiplexed on Secondary CCPCH

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs
MaxSCCPCHcount	Maximum number of secondary CCPCHs
MaxFACHcount	Maximum number of FACHs mapped onto secondary CCPCHs
MaxPCHcount	Maximum number of PCHs mapped onto secondary CCPCHs
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.2.5.X RACH transmission parameters (FDD)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Mmax	M		Integer(1..32)	Maximum number of preamble cycles
NB01min	M			Sets lower bound for random back-off
NB01max	M			Sets upper bound for random back-off

10.2.6.5 Constant value (FDD)

This constant value is used by the UE to calculate the initial output power on PRACH according to the Open loop power control procedure.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Constant value	M		Enumerated(-10..10)	dB

10.2.6.24 ~~PRACH power control info (FDD only)~~

~~Information Element/Group name~~	~~Presence~~	~~Range~~	~~IE type and reference~~	~~Semantics description~~
~~UL interference~~	~~M~~		~~Enumerated(-110..-70)~~	~~In dBm~~
~~Constant Value~~	~~M~~		~~Enumerated(-10..10)~~	~~In dBm~~
~~CHOICE mode~~				
~~>FDD~~				
~~>>Primary CPICH DL TX power~~	~~M~~		~~Enumerated(6..43)~~	~~In dBm~~
~~>>Power offsetΔP_0~~	~~M~~		~~Enumerated(-10..10)~~	~~Power step when no acquisition indicator is received. In dBm~~
~~>>Power offsetΔP_1~~	~~M~~		~~Enumerated(-10..10)~~	~~Power step when negative acquisition is received. In dBm~~
~~>>Power offset• Pp-m~~	~~M~~		~~Enumerated(-5..10)~~	~~Power offset between preamble and the message part. In dBm~~
~~>TDD~~				
~~>>Primary CCPCH DL Tx power~~	~~M~~			

~~NOTE: The usage of these parameters needs clarification and is also dependent on the WG1 RACH discussions.~~

10.2.6.25 PRACH power offset (FDD)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Power offset P0	M		Enumerated(1..8)	Power step when no acquisition indicator is received in dB~~.~~
~~Power offset P1~~	~~M~~			~~Power step when negative acquisition is received~~
Preamble Retrans Max	M		Integer(1..64)	Maximum number of preambles in one preamble ramping cycle
Power offset P p-m	M		Enumerated(-5..10)	Power offset between preamble and the message part in dB

10.2.6.42 UL interference (FDD)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UL interference	M		Enumerated(-110..-70)	In dBm

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Document R2-000258

e.g. for 3GPP use the format TP-99xxx
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CHANGE REQUEST

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25.331	CR	149r2	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSG-RAN #7 *list expected approval meeting # here ↑*

For approval for information: **X**

strategic non-strategic: *(for SMG use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 17 Jan 2000

Subject: cdma2000 Hard Handover

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change:

- This CR contains corrections to the inter-system message used for hard handover to cdma2000. In particular the encapsulation of the Global Handoff Direction Message and Extended Handoff Direction Message is made possible in addition to the Universal Handoff Direction Message. This is due to the fact that all the three above messages can be used for handover to cdma2000, depending on the call scenario. Moreover future cdma2000 Handoff messages are also supported.

Clauses affected: 10.2.8.3

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:


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10.2.8.3 Inter-system message

This Information Element contains one or several messages that are structured and coded according to the specification used for the system type indicated by the first parameter.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
System type	M		Enumerated (GSM,cdma 2000,12..15)	
~~Message(s)~~	~~M~~	~~1..<maxInterSysMessages>~~	~~Bitstring (1..512)~~	~~Formatted and coded according to specification for the indicated system type. See Note 1~~
CHOICE *system*				
>GSM				
>>Message(s)	M	1..<maxInterSysMessages>	Bitstring (1..512)	Formatted and coded according to GSM specifications
>cdma2000				
>>cdma2000Message		1..<maxInterSysMessages>		
>>>MSG_TYPE(s)	M		Bitstring (8)	Formatted and coded according to cdma2000 specifications
>>>~~Message~~cdma2000Message payload(s)	M		Bitstring (1..512)	Formatted and coded according to cdma2000 specifications

Range Bound	Explanation
MaxInterSysMessages(=4)	Maximum number of Inter System Messages to send

~~NOTE 1: For inter-system handovers to IS-2000 system, this field shall consist of the Universal Handoff Direction message, described in Section 3.7.3.3.2.36 of TIA/EIA IS-2000.5~~

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CHANGE REQUEST

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25.331	CR	150r1	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG2 **Date:** 21 Jan 2000

Subject: CPCH parameters with corrections.

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: This CR contains corrections and editorial modifications to CPCH parameters. A definition for CPCH set ID which was approved in R2-99H31 is also added.

Clauses affected: 10.1.47.5.11, 10.2.5, 10.2.6.6, 10.2.6.7

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:


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10.1.47.5.11 System Information Block type 9 (FDD)

The system information block type 9 contains CPCH information to be used in the cell.

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
CPCH set persistency value	~~M~~	1 .. <maxCPCHsetcount>		

Multi Bound	Explanation
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.2.5 Transport CH Information elements

10.2.5.1 Dynamic Control (FDD only)

Indicates if this transport channel is controlled by DRAC procedure or not.

10.2.5.2 Silent period duration before release (FDD only)

Indicates the maximum silent period duration before releasing the resource. This parameter may be merged with the Fkp-b parameter defined in the 'Transmission stop and resumption control' procedure defined in [1].

NOTE: [1] RAN/WG1 S1.14 document

10.2.5.3 Time duration before retry (FDD only)

Indicates the time duration before retrying to get the transmission permission on a DCH controlled by DRAC procedure, in case permission has not been granted.

10.2.5.4 Transmission time validity (FDD only)

Indicates the duration for which permission is granted on a DCH controlled by DRAC procedure.

10.2.5.5 Transparent mode signalling info

This information element points out a transport channel that is used for transparent mode signalling, and which type of message that is sent on the DCCH mapped on that channel.

There are two modes of this transparent mode signaling. Mode 1 controls all transport channels for one UE. Mode 2 only control a subset of the transport channels for one UE.

Information Element	Presence	Range	IE type and reference	Semantics description
Transport channel identity	M			Transport channel used for transparent mode signalling DCCH
CHOICE *Transparent signalling mode*				
>Mode 1				
>>Message type	M		Enumerated (TRANSPORT FORMAT COMBINATION CONTROL)	Indicates which type of message sent on the transparent mode signalling DCCH
Mode 2				
>>Controlled transport channels	M	1 to <MaxTrChCount>	Enumerated(1..64)	The transport channels that are effected by the rate control commands sent on this transparent mode DCCH

10.2.5.6 Transport channel identity

This information element is used to distinguish transport channels (both common and dedicated transport channels).

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Transport channel identity	M		Enumerated(1..64)	

10.2.5.7 Transport Format Combination Set

Indicates the allowed combinations of already defined Transport formats and the mapping between these allowed TFCs and the corresponding TFCI values.

For FDD, Where the UE is assigned access to one or more DSCH transport channels then the UTRAN has the choice of two methods for signalling the mapping between TFCI(field 2) values and the corresponding TFC:

Method #1 - TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given transport format combination (value of CTFC_DSCH). The CTFC_DSCH value specified in the first group applies for all values of TFCI(field 2) between 1 and the specified 'Max TFCI(field2) value'. The CTFC_DSCH value specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2) value' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value used by the UE in constructing its mapping table starting at the largest value reached in the previous group plus one.

Method #2 - Explicit

The mapping between TFCI(field 2) value and CTFC_DSCH is spelt out explicitly for each value of TFCI (field2).

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *DSCH*				
>FDD without access to DSCH assigned or TDD				This choice is made if the UE is not assigned any DSCH transport channels
>>CHOICE TFCS representation	M			
>>>Complete reconfiguration		1 to MaxTFCcount		
>>>>CTFC		1 to MaxTFCcount	Integer(0..MaxCTFC-1)	The first instance of the parameter *Transport format combination* corresponds to Transport format combination 0, the second to transport format combination 1 and so on. Integer number calculated according to clause 14.
>>>>Gain Factor β_c	O		Integer (0.. 15)	For DPCCH or control part of PRACH
>>>>Gain Factor β_d	O		Integer (0..15)	For DPCCH or data part of PRACH
>>>Removal		1 to MaxDelTFCcount		
>>>>TFCI		1 to MaxDelTFCcount	Integer(0.. MaxTFCIValue)	Removal of TFCI. The integer number(s) is a reference to the transport format combinations to be removed.
>>>Addition		1 to MaxAddTFCcount		
>>>>AddCTFC		1 to MaxAddTFCcount	Integer(0.. MaxCTFC-1)	Addition of TFCI. The integer number(s) is the calculated transport format combination that is added. The new TFC(s) is inserted into the first available position(s) in the TFCI (counting from zero).
>>>>Gain Factor β_c	O		Integer (0.. 15)	For DPCCH or control part of PRACH
>>>>Gain Factor β_d	O		Integer (0..15)	For DPCCH or data part of PRACH
>FDD with access to DSCH				This choice is made if the UE

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
assigned				is assigned one or more DSCH transport channels
>>Length of TFCI2	M		Integer (1..9)	This IE indicates the length measured in number of bits of TFCI(field2)
>>Transport format combination_DCH		1 to <MaxTFCI_1_Combs>		The first instance of the parameter *Transport format combination_DCH* corresponds to TFCI (field 1) = 1, the second to TFCI (field 1) = 2 and so on.
>>>CTFC_DCH	M		Integer(0..MaxCTFC_DCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DSCH transport channels which may be assigned
>>Choice *Signalling method*				
>>>TFCI range				
>>>>TFC mapping on DSCH		1 to <MaxNoTFCIGroups>		
>>>>>Max TFCI(field2) value	M		Integer(1..512)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC_DSCH applies
>>>>>>CTFC_DSCH	M		Integer(0..MaxCTFC_DSCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned
>>>Explicit				
>>>>Transport format combination_DSCH		1 to <MaxTFCI_2_Combs>		The first instance of the parameter *Transport format combination_DSCH* corresponds to TFCI (field2) = 1, the second to TFCI (field 2) = 2 and so on.
>>>>>CTFC_DSCH	M		Integer(0..MaxCTFC_DSCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned

Range Bound	Explanation
MaxCTFC	Maximum value number of the CTFC value is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14.
MaxTFCCount	Maximum number of Transport Format Combinations.
MaxTFCValue	The max value of the Transport Format Combinations that currently is defined for this UE.
MaxAddTFCIcount	Maximum number of Transport Format Combinations to be added.
MaxDelTFCcount	Maximum number of Transport Format Combinations to be removed.
MaxTFCI_1_Combs	Maximum number of TFCI (field 1) combinations (given by 2 raised to the power of the length of the TFCI (field 1))
MaxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI (field 2))
MaxNoTFCIGroups	Maximum number of groups, each group described in

Range Bound	Explanation
	terms of a range of TFCI(field 2) values for which a single value of CTFC_DSCH applies
MaxCTFC_DCH	Maximum value of CTFC_DCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DCH transport channels are taken into account in the calculation.
MaxCTFC_DSCH	Maximum value of CTFC_DSCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DSCH transport channels are taken into account in the calculation..

10.2.5.8 Transport Format Combination Set Identity (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TFCS ID	M		Integer (0...3)	Indicates the identity of every TFCS within a UE
Shared Channel Indicator	O		Boolean	Indicates use of shared channels.

10.2.5.9 Transport Format Combination Subset

Indicates which Transport format combinations in the already defined Transport format combination set are allowed.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE Subset representation	M			
>Minimum allowed Transport format combination number			Integer(0..MaxTFCValue-1)	The integer number is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Allowed transport format combination		1 to <maxTFCcount>	Integer(0..MaxTFCValue-1)	The integer number(s) is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Non-allowed transport format combination		1 to <MaxTFCcount>	Integer(0..MaxTFCValue)	The integer number(s) is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Restricted TrCH information		1 to <MaxRstTrCHcount>		
>>Restricted TrCH identity	M		Integer(0..MaxTrCHValue)	The integer number(s) is a reference to the transport channel that is restricted.
>>Allowed TFIs	O	1 to <MaxTFcount>	Integer(0..MaxTFValue)	The integer number(s) is a reference to the transport format that is allowed. If no elements are given, all transport formats or the TrCH with non-zero rate are restricted.

Range Bound	Explanation
MaxTFCcount	Maximum number of Transport Format Combinations that could be sent as the limited set that the UE is allowed to use is 1023.
MaxTFCValue	The max value of the Transport Format Combinations that currently is defined for this UE.
MaxRstTrCHcount	Maximum number of Transport Channels that could be restricted.
MaxTrCHValue	Maximum value of the Transport Channels that currently is defined for this UE.
MaxTFcount	Maximum number of the Transport Formats that is defined.
MaxTFValue	Maximum value of the Transport Formats that is defined.

10.2.5.10 Transport Format Set (TFS)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *Transport channel type*	M			
>Dedicated transport channels	M			
>>Dynamic Transport Format Information		1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	
>>>>CHOICE *Transparent mode RLC PDU size*				
>>>>>Size type 1				1 bit granularity
>>>>>>Size part 1	M		Enumerated(1..128)	
>>>>>Size type 2				8 bit granularity
>>>>>>Size part 1	M		Enumerated(136, 144..256)	
>>>>>>Size part 2	O		Integer (1..7)	Added to size part 1.
>>>>>Size type 3				16 bit granularity
>>>>>>Size part 1	M		Enumerated(272, 288..1024)	
>>>>>>Size part 2	O		Integer (1..15)	Added to size part 1.
>>>>>Size type 4				64 bit granularity
>>>>>>Size part 1	M		Enumerated(1088, 1152..4992)	
>>>>>>Size part 2	O		Integer (1..63)	Added to size part 1.
>>>>CHOICE *Acknowledged mode RLC PDU size*				
>>>>>Size type 1			Enumerated(24,32..272)	8 bit granularity
>>>>>Size type 2			Enumerated(304, 336..1040)	32 bit granularity
>>>>>Size type 3			Enumerated(1104, 1168..4944)	64 bit granularity
>>>>CHOICE *Unacknowledged mode RLC PDU size*				
>>>>>Size type 1			Enumerated(16,24..264)	8 bit granularity
>>>>>Size type 2			Enumerated(296,328..1032)	32 bit granularity 1-3 octets
>>>>>Size type 3			Enumerated(1096,1160..5000)	64 bit granularity 1-7octets
>>>CHOICE mode				
>>>>TDD				
>>>>>Transmission time interval	C-TTIdynamic	1 to <maxTTIcount>	Enumerated(10, 20, 40, 80)	
>>Semi-static Transport Format Information				
>>>Transmission time interval	C-TTIsemistatic		Enumerated(10, 20, 40, 80)	

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
>>>Type of channel coding			Enumerated(No coding, Convolutional, Turbo)	
>>>Coding Rate	C-Coding		Enumerated(1/2, 1/3)	
>>>Rate matching attribute			Integer(1..maxRM)	
>>>CRC size	M		Enumerated(0, 8, 12, 16, 24)	
>>>CHOICE mode				
>>>>TDD				
>>>>>2nd interleaving mode	O		Enumerated(Frame related, Timeslot related)	Frame or timeslot related interleaving. Default Frame related.
>Common transport channels				
>>Dynamic Transport Format Information		1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	
>>>CHOICE mode				
>>>>FDD				
>>>>>CHOICE *Transport block size*	C-Blocks			
>>>>>>Size type 1			Enumerated(48,56..296)	8 bit granularity
>>>>>>Size type 2			Enumerated(312, 328..1320)	16 bit granularity
>>>>>>Size type 3			Enumerated(1384, 1448..4968)	64 bit granularity
>>>>TDD				
>>>>>CHOICE *RLC mode*	C-Blocks			
>>>>>>CHOICE *Bit mode RLC PDU size*				
>>>>>>>Size type 1				1 bit granularity
>>>>>>>>Size part 1	M		Enumerated(1..128)	
>>>>>>>Size type 2				8 bit granularity
>>>>>>>>Size part 1	M		Enumerated(136, 144..256)	
>>>>>>>>Size part 2	O		Integer (1..7)	Bits Added to size part 1.
>>>>>>>Size type 3				16 bit granularity
>>>>>>>>Size part 1	M		Enumerated(272, 288..1024)	
>>>>>>>>Size part 2	O		Integer (1..15)	Bits Added to size part 1.
>>>>>>>Size type 4				64 bit granularity
>>>>>>>>Size part 1	M		Enumerated(1088, 1152..4992)	
>>>>>>>>Size part 2	O		Integer (1..63)	Bits Added to size part 1.
>>>>>>CHOICE *Octet mode*				

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
RLC PDU size				
>>>>>>>Size type 1				8 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(16,24..272)	
>>>>>>>Size type 2				32 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(304, 336..1040)	
>>>>>>>>Size Part 2	O		Integer (1..3)	Octets added to size part 1.
>>>>>>>Size type 3				64 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(1104, 1168..4944)	
>>>>>>>>Size Part 2	O		Integer (1..7)	Octets added to size part 1.
>>>>>MAC Header Type	O		Integer (1..7)	Default is DCH MAC header type (only needed for TDD mode)
>>Semi-static Transport Format Information				
>>>Transmission time interval	C-TTIsemistatic		Enumerated(10, 20, 40, 80)	
>>>Type of channel coding	M		Enumerated(No coding, Convolutional, Turbo)	
>>>Coding Rate	C-Coding		Enumerated(1/2, 1/3)	
>>>Rate matching attribute	M		Integer(1..maxRM)	
>>>CRC size	M		Enumerated(0, 8, 12, 16, 24)	

Range Bound	Explanation
maxTTIcount	Denotes the amount of different TTI that are possible for that transport format.

Condition	Explanation
Blocks	This IE is only present if IE "Number of Transport Blocks" is greater than 0.
Coding	This IE is only present if IE "Type of channel coding" is "Convolutional"
TTIdynamic	This IE is mandatory if not defined as semistatic parameter. Otherwise it is absent.
TTIsemistatic	This IE is mandatory if not defined as dynamic parameter. Otherwise it is absent.

Range Bound	Explanation
MaxTFcount	Maximum number of different transport formats that can be included in the Transport format set for one transport channel is 32.
MaxRM	Maximum number that could be set as rate matching attribute for a transport channel is 256.

CHOICE *RLC mode*	Condition under which the given *RLC mode* is chosen
Bit mode RLC PDU size	The RLC entity mapped to this transport channels can generate bit specific RLC PDU sizes
Octet mode RLC PDU size	The RLC entity mapped to this transport channels can only generate octet aligned RLC PDU sizes

CHOICE *Transport channel type*	Condition under which the given *Transport channel type* is chosen
Dedicated transport channels	The transport channel that is configured with this TFS is of type DCH
Common transport channels	The transport channel that is configured with this TFS is of a type not equal to DCH

NOTE: The parameter "rate matching attribute" is in line with the RAN WG1 specifications. However, it is not currently in line with the description in 25.302.

10.2.5.11 CPCH set ID (FDD only)

This information element indicates that this transport channel may use any of the Physical CPCH channels defined in the CPCH set info which contains the same CPCH set ID. The CPCH set ID associates the transport channel with a set of PCPCH channels defined in a CPCH set info IE and a set of CPCH persistency values. The CPCH set info IE(s) and the CPCH persistency values IE(s) each include the CPCH set ID and are part of the SYSTEM INFORMATION message

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CPCH set ID	M		Integer(1...<maxCPCHsetcount>)	Identifier for CPCH set info and CPCH persistency value messages

Range Bound	Explanation
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.2.6.6 CPCH persistency values (FDD only)

This IE is dynamic and is used by RNC for load balancing and congestion control. This is broadcast often in the system information message.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CPCH set ID	M		Integer(1…<maxCPCHsetcount>)	Identifier for CPCH set info.
PV_CPCHn	~~M~~	1 to <maxCPCHs>		Persistency value for CPCHn. One PV for each CPCH channel in this CPCH set.

Range Bound	Explanation
MaxCPCHs	Maximum number of CPCH channels in a CPCH set (max=16 with 1 signature per channel)
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.2.6.7 CPCH set info (FDD only)

This IE may be broadcast in the System Information message or assigned by SRNC. It is pseudo-static in a cell.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CPCH set ID	M			Indicates the ID number for a particular CPCH set allocated to a cell.
AP preamble code	M			256 chip preamble code for AP in UL
AP-AICH channelisation code	M			256 chip channelisation code for AP-AICH in DL
AP access slot subchannel	~~O~~	0~~1~~ to <maxSubChNum>	Enumerated (0,1,2,….11)	Lists the set of subchannels to be used for AP access preambles. Note: if not present, all subchannels are to be used without access delays.
CD preamble code	M			256 chip preamble code for CD in UL
CD-AICH channelisation code	M			256 chip channelisation code for CD-AICH in DL
CD access slot subchannel	~~O~~	0~~1~~ to <maxSubChNum>	Enumerated (0,1,2,….11)	Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays.
CD signature code	~~O~~	0~~1~~ to <maxSigNum>	Enumerated (0,1,2,….15)	Signature code for CPCH channel CD preamble in UL. Note: if not present, all signatures are available for use.
CPCH channel info	~~M~~	1 to <maxCPCHs>		
>UL scrambling code	M			For CPCH message part
>UL channelisation code	M			For CPCH message part
>DL channelisation code	M			For DPCCH in CPCH message part
>NF_max	M			Max packet length in frames for CPCH message partt
>AP signature code	~~M~~	1 to <maxSigNum>	Enumerated (0,1,2,….15)	AP preamble signature codes for selection of this CPCH channel.
>PCP length	M		Enumerated (0 access slots, 8 access slots)	Indicates length of power control preamble, 0 access slots (no preamble used) or 8 access slots

Range Bound	Explanation
MaxCPCHs	Maximum number of CPCH channels in a CPCH set (max=16 with 1 signature per channel)
MaxSubChNum	Maximum number of available sub channels (max = 12 subchannels defined)
MaxSigNum	Maximum number of available signatures (max = 16)

NOTE: Whether several CPCH Set Info with different QoS can be set in a cell is FFS.

3GPP TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

***Document* R2-000110**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.331	CR	152	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source:	TSG-RAN WG2	**Date:** 2000-1-17
Subject:	U-plane AM RLC reconfiguration by cell update procedure	
Work item:		

Category: *(only one category shall be marked with an X)*			**Release:**	
F	Correction	X	Phase 2	
A	Corresponds to a correction in an earlier release		Release 96	
B	Addition of feature		Release 97	
C	Functional modification of feature		Release 98	
D	Editorial modification		Release 99	X
			Release 00	

Reason for change:
The IE “RLC re-configuration indicator” in the CELL UPDATE CONFIRM message is used to notify the UE to re-configure the AM_RLC in case UTRAN wants to re-configure AM_RLC (e.g. in case SRNC relocation is performed without keeping RLC status from old SRNC to new SRNC.). Since the IE is currently defined only for C-plane, SRNC relocation without keeping RLC status cannot be performed on U-plane. This restricts the implementation of U-plane. In order to allow the flexibility of the implementation, re-configuration of RLC can be chosen not only on C-plane but also on U-plane. Therefore the IE “RLC re-configuration indicator” should also be defined for U-plane.

Clauses affected: 8.3.1.1, 8.3.1.5, 10.1.5, 10.2.3.32

Other specs affected:		
Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:


help.doc

<--------- double-click here for help and instructions on how to create a CR.

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8.3.1.1 General

The main purpose of the cell update procedure is to update UTRAN with the current cell of the UE after cell reselection in CELL_FACH or CELL_PCH state. It may also be used for supervision of the RRC connection, even if no cell reselection takes place. The cell update procedure can also be used to re-configure the AM RLC entities for the signalling link and the u-plane link. The UE can use a CELL UPDATE message to notify the unrecoverable error in an AM RLC entity for the signalling link (see NOTE).

NOTE: PHYSICAL CHANNEL RECONFIGURATION COMPLETE message is only used when common channels are configured (doesn't apply to dedicated channels)

8.3.1.5 Reception of the CELL UPDATE CONFIRM message by the UE

Upon receiving the CELL UPDATE CONFIRM message, the UE shall stop timer T302.

The UE shall act upon all received information elements as specified in 8.5.7, unless specified otherwise in the following.

If the CELL UPDATE CONFIRM message includes the IE "CN domain identity" and the IE "NAS system information", the UE shall forward the content of the IE "NAS system information" to the non-access stratum entity of the UE identified by the IE "CN domain identity".

If the CELL UPDATE CONFIRM message includes the IE "URA-Id" the UE shall store this URA identity.

If the CELL UPDATE CONFIRM message does not include IE "new C-RNTI", IE "new U-RNTI", IE "PRACH info" nor IE "Secondary CCPCH info", no RRC response message is sent to the UTRAN.

If the CELL UPDATE CONFIRM message includes the IE "new C-RNTI" and optionally the IE "new U-RNTI" but does not include IE "PRACH info" or IE "Secondary CCPCH info", the UE shall update its identities and transmit an RNTI REALLOCATION COMPLETE message on the uplink DCCH using the PRACH indicated in the broadcast system information.

If the CELL UPDATE CONFIRM message includes the IE "RLC re-configuration indicator (for C-plane)" the UE shall reconfigure the AM RLC entities on C-plane.

If the CELL UPDATE CONFIRM message includes the IE "RLC re-configuration indicator (for U-plane)" the UE shall reconfigure the AM RLC entities on U-plane.

If the CELL UPDATE CONFIRM message includes the IE "PRACH info" and/or the IE "Secondary CCPCH info", the UE shall

- Perform the actions stated in subclauses 8.5.7.6.2 and 8.5.7.6.3
- update its identities if the CELL UPDATE CONFIRM message includes the IE new C-RNTI" and optionally the IE "new U-RNTI"
- transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using the PRACH indicated in CELL UPDATE CONFIRM message

The UE shall enter a state according to subclause 8.5.8 applied on the CELL UPDATE CONFIRM message, unless specified otherwise below.

If the IE "Cell update cause" in CELL UPDATE message was set to "UL data transmission" or "paging response", the UE shall remain in CELL_FACH state.

If the IE "Cell update cause" in CELL UPDATE message was set to "periodic cell update" or "cell reselection", the UE shall return to the state it was in before initiating the cell update procedure.

If the CELL UPDATE CONFIRM message includes the IE "DRX cycle length coefficient", the UE shall update DRX cycle length.

In case none of the above conditions apply, the UE shall return to the state it was in before initiating the cell update procedure.

In case the UE ends in CELL_FACH or CELL_PCH state and periodic cell updating is configured, it shall reset timer T305.

In case the UE does not end in CELL_FACH state, it shall delete its C-RNTI.

If the UE remains in CELL_FACH state and the CELL UPDATE CONFIRM message includes the IE "New C-RNTI" the UE shall then resume data transmission on RB 2 and upward , if RLC-AM or RLC-UM is used on those radio bearers.

10.1.5 CELL UPDATE CONFIRM

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
New U-RNTI	O			
New C-RNTI	O			
RLC re-configuration indicator (foe C-plane)	C-AM_RLC_recon			
RLC re-configuration indicator (for U-plane)	C-AM_RLC_recon			
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Ciphering mode info	O			
UTRAN mobility information elements				
URA identifier	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1,2)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1,2)

Information Element	Presence	Multi	IE type and reference	Semantics description
Physical CH information elements				
Uplink Radio Resources				
Maximum allowed ULTX power	O			
PRACH info (for RACH)	O			
CHOICE *mode*				
>FDD				
>>PRACH info (for FAUSCH)	O (FFS)			
Downlink Radio Resources				
CHOICE *mode*				
>FDD				
>>Primary CPICH info	O			
>TDD				
>>Primary CCPCH info	O			
Secondary CCPCH info	O			

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

Condition	Explanation
AM_RLC_recon	This IE is only sent when the UTRAN requests AM RLC re-configuration

NOTE 1: It depends on the length of these information whether this message can be used to notify these information to UE.

NOTE 2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

10.2.3.32 RLC re-configuration indicator

This IE is used to re-configure AM RLC on c-plane and u-plane.

3GPP TSG-RAN WG2 Meeting #11
Torino, Italy 28th-3rd March. 2000

Document R2-000654
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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25.331	CR	154r3	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	Strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		Non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 3 March, 2000

Subject: Proposed CR to 25.331 for CPCH

Work item:

Category: *(only one category Shall be marked With an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature	X		Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The addition of Channel Assignment for CPCH has been agreed by RAN2 and the proponents of CPCH. This CR adds a new IE associated with CPCH to RRC specification which describes the Versatile Channel Assignment. Other corrections for CPCH are also included.

Clauses affected: 10.1.47.5.11, 10.2.3.9, 10.2.6.6, 10.2.6.7, 10.2.6.45, 10.2.6.46,14.11, 18.1

Other specs Affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:


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10.1.47.5.11 System Information Block type 9 (FDD)

The system information block type 9 contains CPCH information to be used in the cell.

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
CPCH set ~~persistency~~ persistence ~~value~~levels	M	1 .. <maxCPCHsetcount>	CPCH set persistence levels	

Multi Bound	Explanation
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.2.3.9 CPCH Parameters (FDD)

These parameters are used by any UE using any CPCH set allocated to the Node B that is broadcasting this system information.

Information Element/Group name	Presence	~~Range~~Mult	IE type and reference	Semantics description
Initial Priority Delay	O	8		Initial delays for ASC priority. ~~Used only if CPCH partitioning (AP subslot) is not used for ASC priority~~
>NS_IP	M		Integer (0…28)	Number of slots for initial fixed delay for each ASC priority level~~Number of slots for initial delay for given priority level~~
~~Priority level~~	~~M~~			
Backoff control parameters	M			
>N_ap_retrans_max	M		Integer (1…64)	Max number of AP transmissions without AP-AICH response ~~(access cycle)~~, a PHY parameter.
>N_access_fails	M		Integer (1…64)	Max number of ~~access~~ preamble ramping cycles ~~without AP-AICH~~ when NAK response received ~~for link failure~~, a MAC parameter.
~~> N_link_fails~~	~~M~~			~~Max number of preamble ramping cycles without AP-AICH response for link failure, a MAC parameter.~~
>NFS_bo_no-aich	M		Integer (0…31)	~~Max~~ Nnumber of ~~slots~~ frames for UE fixed backoff after N ap_retrans_max unsuccessful AP access attempts, a MAC parameter.
>NSF_bo_busy	M		Integer (0…63)	~~Max~~ nNumber of ~~frames~~ slots for UE fixed backoff after access attempt to busy CPCH, a MAC parameter.
>NF_bo_all_busy	M		Integer (0…31)	Max number of frames for UE backoff after access attempt to last busy CPCH, a MAC parameter. UE randomly selects backoff value from range (0..NF_bo_all_busy)
>NF_bo_~~collision~~mismatch	M		Integer (0…127)	Max number of frames ~~of frames~~ for the UE backoff after received ~~collision~~ mismatch on ~~CPCH~~CD/CA-ICH, a MAC parameter. UE randomly selects backoff value from range (0..NF_bo_mismatch)
>T_CPCH	M		Enumerated (0, 1)	CPCH channel timing ~~-~~ ~~Number of slots~~ used to determine Tau ~~values for CPCH channel timing.~~ A PHY~~hysical~~ parameter

~~NOTE: The WG1 and WG2 discussion should be concluded before the contents of these IEs can be finalised. All of the IEs may be considered optional (O) if the UE is programmed with default values for each IE.~~

10.2.6.6 CPCH persistence~~y~~ levels~~values~~ (FDD only)

This IE is dynamic and is used by RNC for load balancing and congestion control. This is broadcast often in the system information message.

Information Element/Group name	Presence	Mult ~~Range~~	IE type and reference	Semantics description
CPCH set ID	M			Identifier for CPCH set info.
P~~V~~_~~CPCHn~~TF	M	1 to <~~maxCPCHs~~maxTFs>	Dynamic persistence level	Persistence~~y~~ level~~value~~ for ~~CPCHn~~ each Transport Format. ~~One PV for each CPCH channel in this CPCH set.~~

Range Bound	Explanation
Max~~CPCH~~TFs	Maximum number of ~~CPCH channels~~TF in a CPCH set ~~(max=16 with 1 signature per channel)~~

10.2.6.7 CPCH set info (FDD only)

This IE may be broadcast in the System Information message or assigned by SRNC. It is pseudo-static in a cell.

Information Element/Group name	Presence	Mult Range	IE type and reference	Semantics description
CPCH set ID	M		CPCH set ID	Indicates the ID number for a particular CPCH set allocated to a cell.
TFS	M		(see 10.2.5.10)	Transport Format Set Information allocated to this CPCH set.
AP preamble scrambling code	M		Integer (0..255)	Preamble scrambling code for AP in UL
AP-AICH scrambling code	M		Integer (0..255)	Scrambling code for AP-AICH in DL
AP-AICH channelisation code	M		Integer (0..255)	256 Channelisation code for AP-AICH in DL
CD preamble scrambling code	M		Integer (0..255)	Preamble scrambling code for CD in UL
CD/CA-ICH scrambling code	OM		Integer (0..255)	Scrambling code for CD/CA-ICH in DL
CD/CA-AICH channelisation code	M		Integer (0..255)	256 channelisation code for CD/CA-ICH in DL
Available CD access slot subchannel	C-CDSigPresent	1 0 to <maxSubChNum>		Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays.
>CD access subchannel	M		Enumerated (0,1,2,….11)	
Available CD signatures code	O	1 0 to <maxCDSigNum>		Signatures code for CPCH channel CD preamble in UL. Note: if not present, all signatures are available for use.
>CD signature	M		Enumerated (0,1,2,….15)	
Slot Format	M			Indicates slot format of PCPCH of for this CPCH set
> PC Preamble Slot Format	M		Enumerated (0, 1)	Slot format for optional power control preamble in UL
> UL DPCCH Slot Format	M		Enumerated (0,1,2,3,4,5)	Slot format for UL DPCCH
>DL DPCCH Slot Format	M		Enumerated (0, 1)	Slot format for DL DPCCH
N_start_message	M		Integer (1..8)	Number of Frames for start of message indication
Channel Assignment Active	O	Boolean		When present, indicates that Node B send a CA message and mapping rule shall be used.
CPCH status indication mode	M		Enumerated (PCPCH availability, PCPCH availability and minimum available Spreading Factor)	Defines the status information type broadcast on the CPCH Status Indication Channel (CSICH)
PCPCH Channel Info.		1 to <maxPCPCHs>		
> UL scrambling code	M		Integer (0..255)	For PCPCH message part
> DL channelisation code	M		Integer	For DPCCH in PCPCH

			(0…511)	message part
> DL scrambling code	O		Integer (0…255)	If not present, the primary DL scrambling code is used
> PCP length	M		Enumerated (0 access slots, 8 access slots)	Indicates length of power control preamble, 0 access slots (no preamble used) or 8 access slots
> UCSM Info	C-NCAA			
>> Available Minimum Spreading Factor		1 to <maxSFNum		-The UE may use this CPCH at any equal to or greater than the indicated Spreading Factor for PCPCH message part. In UE channel selection mode, the Spreading Factor for initial access is the minimum Spreading Factor.
>>> Minimum Spreading Factor	M		Enumerated (4,8,16,32,64,128,256)	
>> NF_max	M		Integer (1…64)	Maximum number of frames for PCPCH message part
>> Channel request parameters for UCSM		0 to <maxSigNum>		Required in UE channel selection mode.
>>>Available AP signature ~~code~~		1 to <maxAPSigNum>		AP preamble signature codes for selection of this PCPCH channel.
>>>> AP signature	M		Enumerated (0,1,2,….15)	
>>>Available AP access slot subchannel		0 to <maxSubChNum>		Lists the set of subchannels to be used for AP access preambles in combination with the above AP signature. Note: if not present, all subchannels are to be used without access delays.
>>>> AP access slot subchannel	M		Enumerated (0,1,2,….11)	
VCAM info	C-CAA			
> Available Minimum Spreading Factor		1 to <maxSFNum		
>> Minimum Spreading Factor	M		Enumerated (4,8,16,32,64,128,256)	
>>NF_max	M		Integer (1..64)	Maximum number of frames for PCPCH message part
>> Maximum available number of PCPCH	M		Integer (1..64)	Maximum available number of PCPCH for the indicated Spreading Factor.
>> Available AP signatures	M	1 to <maxAPSigNum>		Signatures for AP preamble in UL.
>>> AP signature			Enumerated (0,1,2,….15)	
>> Available AP sub-channel	O	1 to < maxAP subCH		AP sub-channels for the given AP signature in UL. Note: if not present, all subchannels are to be used without access delays.
>>> AP sub-channel			Enumerated (0,1,2,….,11)	

Condition	Explanation
CDSigPresent	This IE may be included if IE"Available CD signatures" is present.
NCAA	This IE is included if IE "Channel Assignment Active" is not present
CAA	This IE is included if IE ""Channel Assignment Active" is present.

Range Bound	Explanation
~~*MaxCPCHs*~~	~~Maximum number of CPCH channels in a CPCH set (max=16 with 1 signature per channel)~~
MaxSubChNum	Maximum number of available sub channels (max = 12 subchannels ~~defined~~)
MaxCDSigNum	Maximum number of available signatures for CD (max = 16 signatures)
MaxSFNum	Maximum number of available SFs. In case of single code, max=7.
MaxPCPCHs	Maximum number of PCPCH channels ~~fin~~ in a CPCH Set.
MaxAPSigNum	Maximum number of available signatures for AP(max = 16 signatures)
MaxAPsubCH	Maximum number of available sub channels for AP signature (max=12 sub channels)

NOTE: Criteria for DL poiwer control needs to be defined.

~~NOTE: Whether several CPCH Set Info with different QoS can be set in a cell is FFS.~~

10.2.6.45 CPCH Status Indication mode

CPCH Status Indication mode can take 2 values: PCPCH Availability (PA) mode and PCPCH Availability with Minimum Available Spreading Factor (PAMASF) mode. PAMASF mode is used when Channel Assignment is active. PA mode is used when Channel Assignment is not active (UE Channel Selection is active). These two separate modes are described independently in the section that follows. TS25.211 defines the Status Indicators (Sis) of the CSICH channel which convey the CPCH status information described here. A CSICH may contain from 1 upto a maximum of 60 Status Indicators.

PCPCH Availability (PA) mode

In PA mode, CPCH Status Indication conveys the PCPCH Channel Availability value which is a 1 to 16 bit value which indicates the availability of each of the 1 to 16 defined PCPCHs in the CPCH set. There is one bit of the PCPCH Channel Availability (PCA) value for each defined PCPCH channel. If there are 2 PCPCHs defined in the CPCH set, then there are 2 bits in the PCA value. And likewise for other numbers of defined PCPCH channels up to 16 maximum CPCH channels per set when UE Channel Selection is active.

The number of SIs (Status Indicators) per frame is a function of the number of defined PCPCH channels.

Number of defined PCPCHs	Number of SIs per frame
1, 2, 3	*3*
4,5	*5*
6,7,8,9,10,11,12,13,14,15	*15*
16	*30*

When the number of SIs per frame exceeds the number of defined PCPCHs, the SIs which exceed the number of PCPCHs shall be set to 0. Otherwise, the value of the SI shall indicate the PCA value for one of the defined PCPCHs, where PCA=1 indicates that the PCPCH is available, and PCA=0 indicates that the

PCPCH is not available. SI0 shall indicate the PCA of PCPCH1, SI1 shall indicate the PCA of PCPCH2, etc., for each defined PCPCH.

PCPCH Availability with Minimum Available Spreading Factor (PAMASF) mode

In PAMASF mode is similar to the PA mode with two differences:

1. The first three Status Indicators are used to convey the Minimum Available Spreading Factor (MASF) or maximum data rate which is available at that particular point in time.

2. The remaining Sis each convey a PCA value fo one of the defined PCPCHs in the set, which may include upto 57 CPCHs when Channel Assignment is active.

MASF is a 3 bit number with bits MASF0 throught MASF2 where MASF0 is the MSB of the MASF value and MASF2 is the LSB of the MASF value. MASF value bits map to Status Indicators (SIs) as follows:

MASF0 = SI0

MASF1 = SI1

MASF2 = SI2

The following table defines the SI indicator values to convey the Minimum Available Spreading Factor:

Minimum Available Spreading Factor (MASF)	SI0	SI1	SI2	Semantics description
N/A	0	0	0	No CPCH resources available.
256	0	0	1	Only 256 SF avaialble.
128	0	1	0	Only 128 or greater SF available.
64	0	1	1	Only 64 or greater SF available.
32	1	0	0	Only 32 or greater SF available.
16	1	0	1	Only 16 or greater SF available.
08	1	1	0	Onlu 8 or greater SF available.
04	1	1	1	All SFs available.

The remaining SIs convey PCA values for the PCPCHs defined in the CPCH set, or they are unused and set to 0. The number of SIs (Status Indicators) per frame is a function of the number of defined PCPCH channels.

Number of defined PCPCHs	Number of SIs per frame
1, 2,	*5*
3,4,5,6,7,8,9,10,11,12	*15*
13,14,15,16,17,18,19,20,21,22,23,24,25,26,27	*30*
28....57	*60*

When the number of SIs > (# PCPCHs + 3), the SIs greater than or equal to (#PCPCHs + 3) shall be set to 0. Otherwise, the value of the SI shall indicate the PCA value for one of the defined PCPCHs, where PCA=1 indicates that the PCPCH is available, and PCA=0 indicates that the PCPCH is not available. SI3 shall indicate the PCA of PCPCH1, SI4 shall indicate the PCA of PCPCH2, etc., for each defined PCPCH.

14.11 Versatile Channel Assignment mapping rule(FDD only)

When Versatile Channel Assignment Method (VCAM) is used in the CPCH procedure, the following mapping rules shall be used to specify one PCPCH.

If the number of PCPCHs is less than or equal to 16, there is a one to one mapping between the CA index and the PCPCH index. Thus a suitable AP signature (and/or AP sub-channel) number is transmitted for the required spreading factor based on the broadcast system information, and the assigned PCPCH index (having the requested spreading factor) corresponds to the received CA index.

When the number of PCPCHs is greater than 16, a combination of an AP signature (and/or AP sub-channel) number and a CA signature number specifies one PCPCH as follows:

In VCAM mapping rule, a combination of an AP signature (and/or AP sub-channel) number and a CA signature number specifies one PCPCH. In a CPCH set, there are K available PCPCH's which are numbered k=0,1,…, K-1, and there are R available Minimum Spreading Factor A_r, r=0,1,…,R-1, that a UE can request and use. The maximum available number of PCPCH's and the number of available AP signatures (and/or AP sub-channels) for A_r are denoted as P_r and S_r, respectively, for r=0,1,…,R-1. Tr represents the number of CA signatures for A_r which are needed for specifying PCPCH. The default value of Tr is 16.

S_r always satisfies $S_r \geq \min\{s : s \times T_r \geq P_r\}$. :

The list of available AP signatures (and/or AP sub-channels) for each A_r is renumbered from signature index 0 to signature index S_r -1, starting with the lowest AP signature (and/or AP sub-channel) number, and continuing in sequence, in the order of increasing signature numbers.

Then for given AP signature (and/or AP sub-channel) number and CA signature number, the number k that signifies the assigned PCPCH is obtained as

$$k = \{[(i+n) \bmod S_r] + j\, S_r\} \bmod P_r,$$

where i (i=0,1,…,S_r-1) is the AP signature (and/or AP sub-channel) index for A_r, j (j=0,1,…,min(P_r,T_r)-1) is the CA signature number for A_r and n is a nonnegative integer which satisfies

$$n M_r S_r \leq i + j S_r < (n+1) M_r S_r \text{ where } M_r = \min\{m : (m S_r) \bmod P_r = 0\}.$$

An example of the above mapping rule is shown in 18.1.

18 Appendices: Examples of operation

18.1 Example of VCAM mapping rule

Table XX. Example of Mapping Rule for PCPCH ≥ 16

PCPCH (k)		SF = 128			SF = 256			
0		AP_0(AP0), CA_0	AP_2(AP1), CA_7	AP_1(AP2), CA_{14}	AP_0(AP3), CA_0	AP_1(AP4), CA_5	AP_2 (AP5), CA_{10}	AP_3(AP6), CA_{15}
1		AP_1(AP1), CA_0	AP_0(AP2), CA_7	AP_2(AP0), CA_{14}	AP_1(AP4), CA_0	AP_2(AP5), CA_5	AP_3(AP6), CA_{10}	
2		AP_2(AP2), CA_0	AP_1(AP0), CA_7	AP_0(AP1), CA_{14}	AP_2(AP5), CA_0	AP_3(AP6), CA_5	AP_0(AP3), CA_{11}	
3		AP_0(AP0), CA_1	AP_2(AP1), CA_8	AP_1(AP2), CA_{15}	AP_3(AP6), CA_0	AP_0(AP3), CA_6	AP_1(AP4), CA_{11}	
4		AP_1(AP1), CA_1	AP_0(AP2), CA_8	AP_2(AP0), CA_{15}	AP_0(AP3), CA_1	AP_1 (AP4), CA_6	AP_2(AP5), CA_{11}	
5		AP_2(AP2), CA_1	AP_1(AP0), CA_8	AP_0(AP1), CA_{15}	AP_1(AP4), CA_1	AP_2(AP5), CA_6	AP_3(AP6), CA_{11}	
6		AP_0(AP0), CA_2	AP_2(AP1), CA_9		AP_2(AP5), CA_1	AP_3(AP6), CA_6	AP_0(AP3), CA_{12}	
7		AP_1(AP1), CA_2	AP_0(AP2), CA_9		AP_3(AP6), CA_1	AP_0(AP3), CA_7	AP_1(AP4), CA_{12}	
8		AP_2(AP2), CA_2	AP_1(AP0), CA_9		AP_0(AP3), CA_2	AP_1(AP4), CA_7	AP_2(AP5), CA_{12}	
9		AP_0(AP0), CA_3	AP_2(AP1), CA_{10}		AP_1(AP4), CA_2	AP_2(AP5), CA_7	AP_3(AP6), CA_{12}	
10		AP_1(AP1), CA_3	AP_0(AP2), CA_{10}		AP_2(AP5), CA_2	AP_3(AP6), CA_7	AP_0(AP3), CA_{13}	
11		AP_2(AP2), CA_3	AP_1(AP0), CA_{10}		AP_3(AP6), CA_2	AP_0(AP3), CA_8	AP_1(AP4), CA_{13}	
12		AP_0(AP0), CA_4	AP_2(AP1), CA_{11}		AP_0(AP3), CA_3	AP_1(AP4), CA_8	AP_2(AP5), CA_{13}	
13		AP_1(AP1), CA_4	AP_0(AP2), CA_{11}		AP_1(AP4), CA_3	AP_2(AP5), CA_8	AP_3(AP6), CA_{13}	
14		AP_2(AP2), CA_4	AP_1(AP0), CA_{11}		AP_2(AP5), CA_3	AP_3(AP6), CA_8	AP_0(AP3), CA_{14}	
15		AP_0(AP0), CA_5	AP_2(AP1), CA_{12}		AP_3(AP6), CA_3	AP_0(AP3), CA_9	AP_1(AP4), CA_{14}	
16		AP_1(AP1), CA_5	AP_0(AP2), CA_{12}		AP_0(AP3), CA_4	AP_1(AP4), CA_9	AP_2(AP5), CA_{14}	
17		AP_2(AP2), CA_5	AP_1(AP0), CA_{12}		AP_1(AP4), CA_4	AP_2(AP5), CA_9	AP_3(AP6), CA_{14}	
18		AP_0(AP0), CA_6	AP_2(AP1), CA_{13}		AP_2(AP5), CA_4	AP_3(AP6), CA_9	AP_0(AP3), CA_{15}	
19		AP_1(AP1), CA_6	AP_0(AP2), CA_{13}		AP_3(AP6), CA_4	AP_0(AP3), CA_{10}	AP_1(AP4), CA_{15}	
20		AP_2(AP2),	AP_1(AP0), CA_{13}		AP_0(AP3), CA_5	AP_1(AP4), CA_{10}	AP_2(AP5), CA_{15}	

		CA_6						

Note:

- SF (A_0) = 128, Number of AP (S_0) = 3: Re-numbered AP0 = AP_0, AP1 = AP_1, AP2 = AP_2
- SF (A_1) = 256, Number of AP (S_1) = 4: Re-numbered AP3 = AP_0, AP4 = AP_1, AP5 = AP_2, AP6 = AP_3
- P_0=P_1=21
- T_0=T_1=16.
- In this example, M_0=7, M_1=21

3GPP TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

Document R2-000220

3G CHANGE REQUEST

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25.331	CR	155r1	Current Version:	3.1.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG-RAN#7 *list TSG meeting no. here ↑*

for approval [X] for information [ ] *(only one box should be marked with an X)*

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [X] UTRAN [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 20/01/2000

,

Subject: Information elements for ASC

3G Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	[ ]
A	Corresponds to a correction in a 2G specification	[ ]
B	Addition of feature	[ ]
C	Functional modification of feature	[X]
D	Editorial modification	[ ]

Reason for change:
Support of ASC on PRACH for TDD.
Info elements are changed accordingly.
Corrections related to PRACH power control

Clauses affected: 10.1.47.8,10.1.47.5.9, 10.2.3.28, 10.2.6.3,10.2.6.23,10.2.6.24

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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<--------- double-click here for help and instructions on how to create a CR.

10.1.47.5.8 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common physical channels to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
PhyCH information elements				
Frequency info	O			
Maximum allowed UL TX power	O			
Primary CCPCH info	O			Note 1
CHOICE *mode*				
>FDD				
>>PICH Power offset	M			
>>AICH Power offset	M			
>>Secondary CPICH info	O			Note 2
PRACH information		0 .. <maxPRACHcount>		
>PRACH info	M			
>TFS	M			
>CHOICE *mode*				
>>FDD				
>>>PRACH partitioning	M			
>>>Primary CPICH DL TX power	M			
>>>Constant value	M			
>>>PRACH power offset	M			
>>>AICH info	M			
>>TDD				
>>>ASC Info	O			
Secondary CCPCH information		0 .. <maxSCCPCHcount>		
>Secondary CCPCH info	M			
>TFCS	M			For FACHs and PCH
>FACH/PCH information		1 .. <maxFACHcount>		
>>TFS				For each FACHs and PCH Note 3
>>CTCH indicator	M	Boolean		The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	C-Pich			
CBS DRX Level 1 information	C-CTCH			

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

NOTE 2: This parameter is needed in case of using adaptive array antenna.

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

Condition	Explanation
CTCH	Present only when the IE "CTCH indicator" is equal to TRUE for at least one FACH.
Pich	PICH info is present only when PCH is multiplexed on Secondary CCPCH

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs
MaxSCCPCHcount	Maximum number of secondary CCPCHs
MaxFACHcount	Maximum number of FACHs mapped onto secondary CCPCHs
MaxPCHcount	Maximum number of PCHs mapped onto secondary CCPCHs
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.9 System Information Block type 7

The system information block type 7 contains the fast changing parameters UL interference and Dynamic persistence level

Information Element	Presence	Multi	IE type and reference	Semantics description
CHOICE mode				
>FDD				
>>UL interference	M			
PhyCH information elements				
PRACHs listed in system information block type 5		1 .. <maxPRACHcount>		The order of the PRACHs is the same as in system information block type 5.
>Dynamic persistence level	M			
PRACHs listed in system information block type 6		0 .. <maxPRACHcount>		The order of the PRACHs is the same as in system information block type 6.
>Dynamic persistence level	M			

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs

10.2.3.28 PRACH partitioning (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Access Service class		1 to 8		
>Available signature Start Index	M		Integer(0..15)	
>Available signature End Index	M		Integer(0..15)	
>Available sub-channel Start Index	M		Integer(0..11)	
>Available sub-channel End Index	M		Integer(0..11)	

The list of available signatures is renumbered from signature index 0 to signature index N-1, where N is the number of available signatures, starting with the lowest available signature number and continuing in sequence, in the order of increasing signature numbers.

- List of available signatures : 16 or less signatures are available.

  Ex : only signatures 0, 5, 10 and 15 are available, then :

Signature 0 is : available signature index 0

Signature 5 is : available signature index 1

Signature 10 is : available signature index 2

Signature 15 is : available signature index 3

The list of available access-slot sub-channels is renumbered from access-slot sub-channel index 0 to access-slot sub-channel index M-1, where M is the number of available access-slot sub-channels, starting with the lowest available access-slot sub-channel number and continuing in sequence, in the order of increasing access-slot sub-channel numbers.

- List of available Access Slot channels : 12 or less sub-channels are available.

  Ex : only sub-channels 0,1 ; 4,5 ; 8,9 are present, then :

  Sub-channel 0 is : available sub-channel index 0

  Sub-channel 1 is : available sub-channel index 1

  Sub-channel 4 is : available sub-channel index 2

  Sub-channel 5 is : available sub-channel index 3

  Sub-channel 8 is : available sub-channel index 4

  Sub-channel 9 is : available sub-channel index 5

One ASC has access to all the access-slot sub-channels between the Available sub-channel Start Index and the Available sub-channel End Index, and to all the signatures between the Available signature Start Index and the Available signature End Index.

NOTE: The above text may eventually be moved to a more appropriate location

10.2.6.3 ASC Info (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
~~Access Service Class 1 Support~~	~~O~~		~~Boolean~~	~~Each PRACH info IE in System Information is associated with an ASC info IE. Any one RACH can support multiple ASCs.~~
~~Access Service Class 2 Support~~	~~O~~		~~Boolean~~	
~~Access Service Class 3 Support~~	~~O~~		~~Boolean~~	
ASC List		1 to 8		List of Access Service classes
>Access service class	M		Integer(1..8)	
>Repetition Period	O		Enumerated(2, 4, 8)	Default value is continuous
>Offset	C RepPer		Integer(0..Repetition Period - 1)	

Condition	Explanation
RepPer	This IE is only present if IE "Repetition Period" is present.

10.2.6.23 PRACH info (for RACH)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Persistence factor N	M			0-1 step ffs
CHOICE *mode*				
>FDD				
>>Available Signature		1 to <maxSigNum>		
>>>Signature	M		Enumerated (0,1.2…..15)	
>>Available SF		1 to <maxSf>		
>>>SF	M		Enumerated (32,64,128,256 chip/sym)	
>>Scrambling code word number	M		Enumerated (0,1.2…..255)	
>>Puncturing Limit	M		Enumerated(0.40, 0.44..1)	Granularity of 0.04
>>Available Sub Channel number		1 to < maxSubChNum >		
>>>Sub Channel number	M		Enumerated (0,1,2,….11)	
>>>RACH message length	M		Enumerated (10 ms, 20 ms)	The 20 ms length is only used for minimum RACH payload (ffs)
>TDD				
>>Timeslot	M		Integer (0...14)	
>>Channelisation code	M		Enumerated ((8/1)...(8/8), (16/1)...(16/16)	1:1 mapping between spreading code and midamble shift
~~>>Max PRACH Midamble Shifts~~	~~O~~		~~Enumerated (4,8)~~	~~The maximum number of midamble shifts for the PRACH: 4 or 8. If no number is specified the default value 8 applies.~~
>>PRACH Midamble	O		Enumerated (Direct~~1~~,~~2~~Direct/Inverted)	Direct or inverted midamble

Range Bound	Explanation
MaxSubChNum	Maximum number of available sub channels = 12
MaxSigNum	Maximum number of available signatures = 16
MaxSf	Maximum number of available SF = 4

10.2.6.24 PRACH power control info (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UL interference	M		Enumerated(-110..-70)	In dBm
Constant Value	M		Enumerated(-10..10)	In dBm
~~CHOICE mode~~				
~~>FDD~~				
~~>>~~Primary CPICH DL TX power	M		Enumerated(6..43)	In dBm
~~>>~~Power offsetΔP_0	M		Enumerated(-10..10)	Power step when no acquisition indicator is received. In dBm
~~>>~~Power offsetΔP_1	M		Enumerated(-10..10)	Power step when negative acquisition is received. In dBm
~~>>~~Power offset• Pp-m	M		Enumerated(-5..10)	Power offset between preamble and the message part. In dBm
~~>TDD~~				
~~>>Primary CCPCH DL Tx power~~	~~M~~			

NOTE: The usage of these parameters needs clarification and is also dependent on the WG1 RACH discussions.

3GPP TSG-RAN Meeting #7 **Document R2-000120**

Madrid, Spain, 13 - 15 March 2000

3G CHANGE REQUEST

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25.331 **CR** **156** Current Version: 3.1.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG-RAN#7 *list TSG meeting no. here ↑* for approval [X] for information [ ] *(only one box should be marked with an X)*

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [X] UTRAN [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 14/01/2000

Subject: Addition of timing advance update parameter to handover related messages

3G Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Reason for change: Handover is now performed with the procedures "Physical channel reconfiguration", "Radio bearer setup", "Radio bearer reconfiguration", "Radio bearer release", "Transport channel reconfiguration". The uplink timing advance update is required in complete messages.
Additionally, the value range for timing advance update is reduced because 64 values are sufficient.

Clauses affected: 8.2.1.6, 8.2.2.5, 8.2.3.6, 8.2.4.5, 8.2.6.5, 8.2.7.3, 8.5.7.3, 10.1.18,10.1.20, 10.1.23, 10.1.26, 10.1.29, 10.1.50, 10.2.6.39

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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<--------- double-click here for help and instructions on how to create a CR.

8.2.1.6 Reception of the RADIO BEARER SETUP COMPLETE message by the UTRAN

When UTRAN has received the RADIO BEARER SETUP COMPLETE message, UTRAN may delete any old configuration and the procedure ends on the UTRAN side.

If the IE "UL Timing Advance" is included, UTRAN shall evaluate the timing advance value that the UE has to use in the new cell after handover.

8.2.2.5 Reception of a RADIO BEARER RECONFIGURATION COMPLETE message by the UTRAN

When UTRAN has received the RADIO BEARER RECONFIGURATION COMPLETE message, UTRAN may delete the old configuration..

If the IE "UL Timing Advance" is included, UTRAN shall evaluate the timing advance value that the UE has to use in the new cell after handover.

8.2.3.6 Reception of the RADIO BEARER RELEASE COMPLETE message by the UTRAN

When UTRAN has received the RADIO BEARER RELEASE COMPLETE message, UTRAN may delete any old configuration, and the procedure ends on the UTRAN side.

If the IE "UL Timing Advance" is included, UTRAN shall evaluate the timing advance value that the UE has to use in the new cell after handover.

8.2.4.5 Reception of the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message by the UTRAN

When UTRAN has received the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message, UTRAN may delete any old configuration and the procedure ends on the UTRAN side.

If the IE "UL Timing Advance" is included, UTRAN shall evaluate the timing advance value that the UE has to use in the new cell after handover.

8.2.6.5 Reception of a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message by the UTRAN

When UTRAN has received the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message, UTRAN may delete any old configuration and the procedure ends on the UTRAN side.

UTRAN may delete the C-RNTI of the UE if the procedure caused the UE to leave the CELL_FACH state.

If the IE "UL Timing Advance" is included, UTRAN shall evaluate the timing advance value that the UE has to use in the new cell after handover.

8.2.7.3 Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE

The UE shall check the C-RNTI to see if the UE is addressed by the message. If so, the UE shall evaluate the message and use the IEs as specified below.

If the CCTrCH addressed by the TFCS-Id in the PHYSICAL SHARED CHANNEL ALLOCATION message is a CCTrCH for DSCH, the UE shall:

- decode the IE "CCTrCH Activation CFN" and the IE "CCTrCH Duration", to determine the time interval for which the allocation shall be valid;
- configure Layer 1 according to the PDSCH information, for the specified time interval;
- start receiving the PDSCH where the TFCI is included;
- receive the PDSCHs, and decode and demultiplex them into the respective DSCH channels according to the TFCI.

If the CCTrCH addressed by the TFCS-Id in the message PHYSICAL SHARED CHANNEL ALLOCATION is a CCTrCH for USCH, the UE shall:

- decode the IE "CCTrCH Activation CFN" and the IE "CCTrCH Duration", to determine the time interval for which the allocation shall be valid;
- configure Layer 1 according to the PUSCH information, for the specified time interval;
- ~~evaluate and apply the potential Timing Advance value for uplink transmissions;~~
- determine the TFCS subset and hence the TFCI values which are possible given the PUSCH allocation for that CCTrCH;
- configure the MAC-c/sh in the UE with this TFCS restriction if necessary;
- transmit USCH Transport Block Sets as required, within the TFCS limits given by the PUSCH allocation.

In addition, the UE shall evaluate the IE "PUSCH Allocation Pending" parameter: If its value is "pending", the UE starts a timer T311. As long as this timer is running, the UE is not allowed to use the RACH for potential USCH capacity requests. See the USCH CAPACITY REQUEST procedure.

In addition if the message contains an optional IE "Timing Advance Information" the UE shall configure the Layer 1 with the new Timing Advance.

Note that the message can also be used to block or enable the UE to issue PUSCH capacity requests, without allocating PUSCH or PDSCH, as shown in the PUSCH capacity request procedure below. In this case, no TFCS-ID and no PUSCH or PDSCH Information is included.

8.5.7.3.7 UL Timing Advance

If the IE “UL Timing Advance” is present, the UE shall

- evaluate and apply the timing advance value for UL transmissions.

10.1.18 PHYSICAL CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a physical channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CHOICE mode				
>TDD				
>>Uplink Timing Advance	C-Handover			Calculated timing advance value for the new cell after handover in a synchronous TDD network

Condition	Explanation
Handover	This information element shall be present in case of handover procedure

10.1.20 PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)

This message is used by UTRAN to assign physical resources to USCH/DSCH transport channels in TDD, for temporary usage by the UE.

RLC-SAP: TM or AM

Logical channel: SHCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
C-RNTI	M			
PUSCH allocation pending	O			
TrCH information elements				
TFCS identity	O			
PhyCH information elements				
PUSCH power control info	O			
Uplink timing advance ~~info~~	O			
PUSCH info	O			
PDSCH info	O			

10.1.23 RADIO BEARER RECONFIGURATION COMPLETE

This message is sent from the UE when a RB and signalling link reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CHOICE mode				
>TDD				
>>Uplink Timing Advance	C-Handover			Calculated timing advance value for the new cell after handover in a synchronous TDD network

Condition	Explanation
Handover	This information element shall be present in case of handover procedure

10.1.26 RADIO BEARER RELEASE COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CHOICE mode				
>TDD				
>>Uplink Timing Advance	C-Handover			Calculated timing advance value for the new cell after handover in a synchronous TDD network

Condition	Explanation
Handover	This information element shall be present in case of handover procedure

10.1.29 RADIO BEARER SETUP COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CHOICE mode				
>TDD				
>>Uplink Timing Advance	C-Handover			Calculated timing advance value for the new cell after handover in a synchronous TDD network

Condition	Explanation
Handover	This information element shall be present in case of handover procedure

10.1.50 TRANSPORT CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a transport channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CHOICE mode				
>TDD				
>>Uplink Timing Advance	C-Handover			Calculated timing advance value for the new cell after handover in a synchronous TDD network

NOTE: The usage of this message for indicating the cell the UE will select in the DCH->RACH/FACH case, is FFS.

Condition	Explanation
Handover	This information element shall be present in case of handover procedure

10.2.6.39 UL Timing Advance (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UL Timing Advance	M		Integer (0..~~255~~63)	Absolute timing advance value to be used to avoid large delay spread at the NodeB

3GPP TSG-RAN WG2 #10 **Document** ***R2-000221***

San Diego, USA, 17-21 January 2000

3G CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	**CR**	**157r2**	Current Version:	3.1.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG-RAN#7 *list TSG meeting no. here ↑* — for approval [X] / for information [ ] *(only one box should be marked with an X)*

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [X] UTRAN [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 20/01/2000

Subject: Physical channel description for TDD

3G Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	X
D	Editorial modification	

Reason for change:

Physical channel descriptions are ordered in an improved way.
Missing ranges are added.
Several CCTrCh are taken into account in info elements where appropriate in order to allow handover of several CCTrCh in one message.
Presence fields are improved.
Missing parameters are added (2nd interleaving mode, is removed from IE TFS in CR160).

Clauses affected: 10.1.20, 10.2.6.9, 10.2.6.18, 10.2.6.20, 10.2.6.27, 10.2.6.30, 10.2.6.33, 10.2.6.43

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

10.1.20 PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)

This message is used by UTRAN to assign physical resources to USCH/DSCH transport channels in TDD, for temporary usage by the UE.

RLC-SAP: TM or AM

Logical channel: SHCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
C-RNTI	M			
PUSCH allocation pending	O			
~~**TrCH information elements**~~				
~~TFCS identity~~	~~O~~			
PhyCH information elements				
PUSCH power control info	O			
Uplink timing advance info	O			
PUSCH info	O			
PDSCH info	O			

10.2.6.9 Downlink DPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>DL channelisation code		1 to <maxChan count>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	O		Integer (0..14)	
>>>Spreading factor	M		Enumerated(4, 16, 32, 64, 128, 256, 512)	
>>>Code number	M		Integer(0..maxCodeNum)	
>>Fixed or Flexible Position	M		Enumerated (Fixed, Flexible)	
>>TFCI existence	M		Boolean	
>>Number of bits for Pilot bits	C-SF		Enumerated (2,4,8 bits)	
>>TX Diversity Mode	M			
>>SSDT Cell Id	O			
>TDD				
>>DL CCTrCh List	C HO list length	1..<maxCCTrCHcount>		
>>>TFCS Identity	C HO presence			Identity of this CCTrCh.
>>>2nd interleaving mode	M		Enumerated(Frame related, Timeslot related)	Frame or timeslot related interleaving.
>>>Activation Time	O		Integer (0...255)	Frame number start of allocation period. Default is activation time in UE information elements.
>>>Duration	O		Integer (01...2556)	Total number of frames. Default = 0 is(for infinite)
>>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>>Puncturing Limit	M		Enumerated(0.40, 0.44..1)	Granularity of 0.04
>>>Repetition period	O		Integer (2,4,8,16,32, 64)Integer (1 ... Repetition period - 1)	Repetition period of the DPCHs. Default value is continuous allocation1.
>>>Repetition length	OC-RepPer		Integer(1..RepetitionPeriod)	Length of the allocation for each repetition period. Default value is 1.
>>>Individual Timeslot info		1 to < max Timeslot count>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
				by the physical layer, the second to the timeslot that shall be used second and so on.
>>>>Timeslot	M		Integer (0...14)	Timeslot within a frame.
>>>>TFCI existence	M		Boolean	If TFCI exists it shall be coded in the first DPCH in this timeslot.
>>>>Burst type	M		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot.
>>>>Midamble shift	O		Integer (0...MaxMidambleShift – 1)	Midamble shift for this timeslot. Default is set by layer 1
>>>>channelisation code		1 to <max Codes count>	Enumerated (~~(1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8),~~ (16/1)...(16/16))	The first instance of the parameter Channelisation code corresponds to the first DPCH in that timeslot that shall be used first by the physical layer, the second to the DPCH in that timeslot that shall be used second and so on.
~~>>>Timeslot~~	~~M~~		~~Integer (0...14)~~	~~Timeslot within a frame.~~
~~>>>TFCI presence~~	~~O~~		~~Boolean~~	~~If TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.~~
~~>>>Burst type~~	~~O~~		~~Enumerated (Typ1, Typ2)~~	~~Short or long midamble for this timeslot. Default is burst type 1.~~
~~>>>Midamble shift~~	~~O~~		~~Integer (0...MaxMidambleShift – 1)~~	~~Midamble shift for this timeslot. Default is set by layer 1~~

Condition	Explanation
STTD	This IE is only sent if STTD is applied
SF	This IE is only sent if SF=128 or 256 is applied. If SF=256, value is 2,4 or 8 If SF=128, value is 4 or 8
RepPer	This IE is absent if IE "Repetition Period" is absent. Otherwise it is present.
HO list lengtht	MaxCCTRCHcount is 8 in case of handover, otherwise it is equal to one.
HO presence	The element is only present in case of handover

Range Bound	Explanation
MaxChancount	Maximum number of channelisation codes used for DL DPCH
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxTimeslotcount	Maximum number of timeslots used for DPCHs =14
MaxCodesCount	Maximum number of codes for one timeslots = 16
MaxMidambleShift	Maximum number of Midamble Shifts = 16

10.2.6.18 PDSCH info (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TFCS Identity	O			TFCS to be used. Default is 1.
Activation time	M		Integer (0...255)	Frame number start of allocation period. Default is Activation time in UE information elements
Duration	M		Integer (01..2556)	Total number of frames for this allocation
2nd interleaving mode	M		Enumerated(Frame related, Timeslot related)	Frame or timeslot related interleaving.
Repetition Period	O		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period Default value is is continuous allocation1
Repetition length	C RepPer0		Integer (1 ... Repetition length –1)	Repetition length for this allocation. Default value is 1
TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
Puncturing Limit	M		Enumerated(0.40, 0.44..1)	Granularity of 0.04
Individual Timeslot info		1 to <maxTimeslotcount>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>channelisation codes	M	1 to <max codes count>	Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)... (16/16))	The first instance of the parameter Channelisation code corresponds to the first PDSCH in that timeslot that shall be used first by the physical layer, the second to the PDSCH in that timeslot that shall be used second and so on.
>Timeslot	M		Integer (0...14)	Timeslot within a frame
>TFCI existence	0M		Boolean	If the TFCI exists it shall be coded in the first PDSCH in this timeslot. Default value is No TFCI.
>Burst Type	0M		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. Default is burst type 1.
>Midamble Shift	O		Integer (0... max Midamble Shift is –1)	Midamble shift for this timeslot. Layer 1 sets default.
>channelisation codes	M	1 to <max codes count>	Enumerated ((16/1)... (16/16))	The first instance of the parameter Channelisation code corresponds to the first

				PDSCH in that timeslot that shall be used first by the physical layer, the second to the PDSCH in that timeslot that shall be used second and so on.

Condition	Explanation
RepPer	This IE is absent if IE "Repetition Period" is absent. Otherwise it is present.

Range Bound	Explanation
MaxTimeslotcount	Maximum number of timeslots used for PDSCHs = 14
Max Codescount	Maximum number of codes for PDSCH = 16

10.2.6.20 PICH Info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>Secondary scrambling code	O		Integer(0..14)	
>>Channelisation code	M		Integer(0..255)	SF is fixed and equal to 256
>>Number of PI per frame	M		Enumerated (18, 36 72 144)	
>>STTD indicator	M		Boolean	
>TDD				
>>Channelisation code	O		Enumerated (~~(1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8),~~ (16/1)...(16/16))	Default is the channelisation code used by the SCCPCH carrying the associated PCH.
>>Timeslot	O		Integer(0...14)	Default is the timeslot used by the SCCPCH carrying the associated PCH.
>>Burst type	M~~O~~		Enumerated (Typ1,Typ2)	~~Default is the burst used by the SCCPCH carrying the associated PCH.~~
>>Midamble shift	O		Integer (0...maxMidambleShift – 1)	Default is the midamble shift used by the SCCPCH carrying the associated PCH.
>>Repetition period/length	O		Enumerated((4/2),(8/2), (8/4),(16/2), (16/4),(16/8), (32/2),(32/4), (32/8),(64/2), (64/4),(64/8))	Default value is a period of 64 and a length of 2 (64/2).
>>Offset	M~~O~~		Integer (0...Repetition period –1)	SFN mod Repetitionperiod = Offset.
~~>>Repetition period~~	~~O~~		~~Integer (1, 2, 4, 8, 16, 32, 64)~~	~~Repetition period of the PICH. Default value is 64.~~
~~>>Repetition length~~	~~O~~		~~Integer (2, 4, 8)~~	~~Length of the allocation for each repetition period. Default~~

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
				~~value is 2.~~
>>Paging indicator length	O		Integer (4, 8, 16)	Indicates the length of one paging indicator. Default is 4.

10.2.6.27 Primary CCPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>STTD indicator	M		Boolean	
>TDD				
>>Timeslot	M		Integer (0...maxTScount)	PSCH timeslot
>>Cell parameters ID	C-MessageType		Integer (0...127)	For the cell parameter table
>>Sync case	C-MessageType		Enumerated (1, 2, 3)	Case 1,2, or 3
>>Repetition period	O		Integer (2, 4, 8, 16, 32, 64)	Repetition period of the PCCPCH. Default is Continuous allocation
>>Repetition length	C RepPer		Integer (1...Repetition period - 1)	Length of the allocation for each repetition.
>>Offset	C RepPer~~O~~		Integer (0... Repetition period-1)	SFN modulo Repetition period = offset. ~~Default value is 0.~~
~~>>Repetition period~~	~~O~~		~~Integer (1, 2, 4, 8, 16, 32, 64)~~	~~Repetition period of the PCCPCH. Default is Default value is 1.~~
~~>>Repetition length~~	~~O~~		~~Integer (1...Repetition period - 1)~~	~~Length of the allocation for each repetition. Default value is 1.~~
>>Block STTD indicator	O			

Condition	Explanation
C-MessageType	Mandatory in HANDOVER COMMAND message
RepPer	This IE is absent if IE Repetition Period is absent. Otherwise it is present.

Range Bound	Explanation
MaxTScount	In synchronisation case 2 and 3 MaxTScount is 6. In synchronisation case 1 MaxTScount is 14.

10.2.6.30 PUSCH info (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TFCS Identity	**O**			**Identity of the CCTrCH to be used. Default is 1.**
Activation time	M		Integer (0..255)	Frame number start of allocation period. ~~Default is Activation time in UE information elements~~
Duration	M		Integer (~~0~~1..25~~6~~)	Total number of frames for this allocation
Puncturing Limit	M		Enumerated(0.40, 0.44..1)	Granularity of 0.04.
2nd interleaving mode	M		Enumerated(Frame related, Timeslot related)	Frame or timeslot related interleaving.
TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
Repetition Period	O		Integer (~~1,~~ 2, 4, 8, 16, 32, 64)	Repetition period of the DPCHs. Default value ~~1~~is continuous allocation
Repetition length	~~O~~RepPer		Integer (1 ... Repetition length –1)	Length of the allocation for each repetition period. ~~Default value is 1~~
Individual Timeslot info		1 to <maxTimeslotcount>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>Timeslot	M		Integer (0...14)	Timeslot number
>TFCI existence	M		Boolean	If the TFCI exists it shall be coded in the first PUSCH in this timeslot.
>Burst Type	M		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. 1.
>Midamble Shift	O		Integer (0...maxMidambleShift – 1)	Midamble shift for this timeslot. Layer 1 sets default.
>channelisation code			Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)... (16/16))	The first instance of the parameter Channelisation code corresponds to the first PUSCH in that timeslot that shall be used first by the physical layer, the second to the PUSCH in that timeslot that shall be used second and so on.
~~>Timeslot~~	~~M~~		~~Integer (0...14)~~	~~Timeslot number~~
~~TFCI existence~~	~~O~~		~~Boolean~~	~~If the TFCI exists it shall be coded in the first PUSCH in~~

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TFCS Identity	O			Identity of the CCTrCH to be used. Default is 1.
				~~this timeslot. Default value is No TFCI.~~
~~>Burst Type~~	~~M~~		~~Enumerated (Typ1, Typ2)~~	~~Short or long midamble for this timeslot. Default is burst type 1.~~
~~>Midamble Shift~~	~~M~~		~~Integer (0...maxMidambleShift – 1)~~	~~Midamble shift for this timeslot. Layer 1 sets default.~~

Condition	Explanation
RepPer	This IE is absent if IE "Repetition Period" is absent. Otherwise it is present.

Range Bound	Explanation
MaxPUSCHTimeslotcount	Maximum number of timeslots used for PUSCHs
MaxCodesCount	Maximum number of codes for PUSCH = 16

10.2.6.33 Secondary CCPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Selection Indicator	C-BCCH		Enumerated (On, Off)	
CHOICE *mode*				
>FDD				
>>Secondary scrambling code	O		Integer (0..14)	
>>STTD indicator	M		Boolean	
>>Spreading factor	M		Enumerated(4, 16, 32, 64, 128, 256)	
>>Code number	M		Integer(0..maxCodeNum)	
>>Pilot symbol existence	M		Boolean	
>>TFCI existence	M		Boolean	
>>Fixed or Flexible Position	M		Enumerated (Fixed, Flexible)	
>>Timing Offset	O			Time difference between PCCPCH
>TDD				
>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>Timeslot	M		Integer (0...14)	Timeslot within a frame
>>TFCI existence	M		Boolean	If the TFCI exists it shall be coded in the first code in this timeslot.
>>Burst type	M		Enumerated(Type1, Type2)	Long or short midamble used in this timeslot.
>>Midamble shift	O		Integer (0...max Midamble Shift-1)	Midamble shift of this timeslot. Layer 1 sets default.
>>Repetition period	O		Integer (~~1,~~ 2, 4, 8, 16, 32, 64)	Repetition period of the SCCPCH . Default is continuous allocation.~~Default value is 1.~~
>>Repetition length	C RepPer~~O~~		Integer (1...Repetitionperiod – 1)	Length of the allocation for each repetition. ~~Default value is 1.~~
>>Offset	C RepPer~~O~~		Integer (0...Repetition Period ~~–~~1)	SFN modulo Repetition period = offset. ~~Default value is 0.~~
>>Channelisation code		1 to < max Codes count >	Enumerated (~~(1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8),~~ (16/1)...(16/16))	The first instance of the parameter Channelisation code corresponds to the first code in that timeslot that shall be used first by the physical layer, the second to the code in that timeslot that shall be used second and so on.
~~>>Time slot~~	~~M~~		~~Integer (0...14)~~	~~Timeslot within a frame~~
~~>>TFCI existence~~	~~O~~		~~Boolean~~	~~If the TFCI exists it shall be~~

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
				~~coded in the first code in this timeslot. Default is No TFCI~~
~~>>Burst type~~			~~Enumerated(Type1, Type2)~~	~~Long or short midamble used in this timeslot. Default is burst type 1~~
~~>>Midamble shift~~	~~O~~		~~Integer (0..max Midamble Shift-1)~~	~~Midamble shift of this timeslot. Layer 1 sets default.~~

Condition	Explanation
BCCH	This IE is only sent when BCCH is used
RepPer	This IE is absent if IE Repetition Period is absent. Otherwise it is present.

Range Bound	Explanation
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxCodesCount	Maximum number of codes in one timeslot.

10.2.6.43 Uplink DPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>UL scrambling code				What short or long uplink scrambling code a certain UE should use
>>>Scrambling code type	M		Enumerated(short, long)	
>>>Scrambling code number	M		Integer(0..16 777215)	(24 bits)
>>Number of DPDCH	M		Integer(1.. maxDPDCH count)	
>>>DPDCH channelisation code	C-*Single*		Enumerated(4, 8, 16, 32, 64, 128, 256)	SF of the channelisation code for data part
>>TFCI existence	M	Boolean		
>>Number of FBI bits	O		Enumerated (1, 2 bits)	If neither SSDT nor FB Mode Transmit Diversity Signalling is supported, this parameter is not needed and the number of FBI bits is set to "0".
>>Puncturing Limit	M			
>TDD				
>>UL CCTrCH List	C HO list length	1 to <maxULC CTrCHcou nt>		
>>>TFCS Identity	C HO presence			Id of that CCTrCH.
>>>Activation Time	O		Integer (0...255)	Frame number start of allocation period Default is the Activation time in the UE information elements
>>>Duration	O		Integer (1...256)	Total number of frames Default is infinite.
>>>2nd interleaving mode	M		Enumerated(Frame related, Timeslot related)	Frame or timeslot related interleaving.
>>>Puncturing Limit	M		Enumerated(0.40, 0.44..1)	Granularity of 0.04
>>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
~~>>Activation Time~~	~~O~~		~~Integer (0...255)~~	~~Frame number start of allocation period Default is the Activation time in the UE information elements~~
~~>>Duration~~	~~O~~		~~Integer (0...255)~~	~~Total number of frames Default = 0 (for infinite).~~
>>>Repetition period	O		Integer (~~1,~~2,4,8,16,32,64)	SFN modulo 64 = repetition period. Default is continuous allocation.~~Default value is 1.~~
>>>Repetition length	C		Integer (1...	Length of the allocation for

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
	RepPer~~O~~		Repetition period – 1)	each repetition period. Default value is 1.
>>>Individual timeslot info		1 to < max Timeslot count>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>>>>Timeslot	M		Integer (0...14)	Timeslot of DPCH for each DPCH
>>>>TFCI existence	M		Boolean	If the TFCI exists it shall be coded in the first DPCH in this timeslot.
>>>>Burst	M		Enumerated (Type1, Type2)	Short or long midamble for this timeslot.
>>>>Midamble shift	O		Integer(0...maxMidamble Shift – 1)	Midamble shift for thistimeslot. Default is set by layer 1.
>>>>channelisation code		1 to < max Codes count >	Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)...(16/16))	Channelisation codes to be used in the uplink for DPCH
~~>>>Timeslot~~	~~M~~		~~Integer (0...14)~~	~~Timeslot of DPCH for each DPCH~~
~~>>>TFCI existence~~	~~O~~		~~Boolean~~	~~If the TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.~~
~~>>>Burst~~	~~O~~		~~Enumerated (Type1, Type2)~~	~~Short or long midamble for this timeslot. Default is burst type 1~~
~~>>>Midamble shift~~	~~O~~		~~Integer(0...maxMidamble Shift – 1)~~	~~Midamble shift for thistimeslot. Default is set by layer 1.~~

Condition	Explanation
Single	This IE is included if IE "Number of DPDCH" is "1"
RepPer	This IE is absent if IE “Repetition Period” is absent. Otherwise it is present
HO list lengtht	MaxCCTRCHcount is 8 in case of handover, otherwise it is equal to one.
HO presence	The element is only present in case of handover

Range Bound	Explanation
MaxDPDCHcount	Maximum number of DPDCHs
MaxCodesCount	Maximum number of codes for one timeslot
MaxTimeslotcount	Maximum number of timeslots used for DPCHs =14
MaxULCCTrCHcount	Maximum number of CCTrCHs configured by the message = 8

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e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	**CR**	**159**	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSG-RAN #7 *list expected approval meeting # here ↑*

for approval	X	strategic		*(for SMG use only)*
for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 2000-01-12

Subject: Message contents for the inter system handover command message to UTRAN operating in TDD mode

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature	X		Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: This CR includes the changes to the Inter-System Handover Command message to UTRAN operating in TDD mode.

Clauses affected: 10.1.8

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:


help.doc

<--------- double-click here for help and instructions on how to create a CR.

10.1.8 HANDOVER TO UTRAN COMMAND

NOTE: Functional description of this message to be included here

RLC-SAP: N/A

Logical channel: N/A

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
UE information elements				
U-RNTI	M			
Activation time	O			
Ciphering algorithm	O		As defined in 10. 2.3.6	Included in case of change of algorithm during handover
RB information elements				
Predefined radio configuration identity	M			
PhyCH information elements				
CHOICE mode				
>FDD				
>>Frequency info_2	M			
>>>UTRA RF Channel number	M		As defined in 10.2.6.14	
>>>Radio access mode	M		As defined in 10.2.6.14	
>>>Maximum allowed UL TX power	M			
>>Uplink DPCH power control info_2				
>>>Uplink DPCH power control info_2	M			
>>>DPDCH power offset	M		As defined in 10.2.6.44	
>>>Power Control Algorithm	M		Enumerated(algorithm 1 or algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
>>>TPC step size	C-algorithm 1		As defined in 10.2.6.44	
>>Uplink radio resource information				
>>>Uplink DPDCH info_2	M			
>>>>Scrambling code type	M		As defined in 10.2.6.43	
>>>>Scrambling code number	M		As defined in 10.2.6.43	
>>>>DPDCH channelisation code	M		As defined in 10.2.6.43	
>>Downlink radio resource information				
>>>Downlink DPCH power control info	M			
>>>Downlink information		1 to <Max Rlcount>		Send downlink information for each radio link to be set-up
>>>>Primary CCPCH info_2	M			
>>>>>Primary scrambling code	M		As defined in 10.2.6.29	
>>>>Downlink DPDCH info_2	M			
>>>>>Secondary scrambling code	O		As defined in 10.2.6.9	
>>>>>Spreading factor	M		As defined in 10.2.6.9	
>>>>>Code number	M		As defined in	

			10.2.6.9	
>TDD				
>>Frequency info	M			
>>>UARFCN (Nt)	M		As defined in 10.2.6.14	
>>>Radio access mode	M		As defined in 10.2.6.14	
>>Uplink radio resource/power control information				
>>>Maximum allowed UL TX power	M		As defined in 10.2.6.16	
>>>Primary CCPCH Tx Power	M		As defined in 10.1.47.5.16	
>>>DPCH Constant Value	M			
>>>UL Target SIR	M			
>>>Individual Timeslot info		1 to <maxTScount>	As defined in 10.2.6.43	
>>>>Timeslot	M		As defined in 10.2.6.43	
>>>>UL Interference	M			
>>>>Channalisation code	M	1 to <maxCodescount>	As defined in 10.2.6.43	
>>>>Burst	M		As defined in 10.2.6.43	
>>>>Midamble Shift	M		As defined in 10.2.6.43	
>>Downlink radio resource/power control information				
>>>Initial SIR target value	M			
>>>Cell parameters ID	M		As defined in 10.2.6.27	
>>>Individual Timeslot info		1 to <maxTScount>	As defined in 10.2.6.9	
>>>>Timeslot	M		As defined in 10.2.6.9	
>>>>Channalisation code	M	1 to <maxCodescount>	As defined in 10.2.6.9	
>>>>Burst	M		As defined in 10.2.6.9	
>>>>Midamble Shift	M		As defined in 10.2.6.9	

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3G CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	160	Current Version:	3.1.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG-RAN#7 *list TSG meeting no. here ↑*

for approval [X] for information [ ] *(only one box should be marked with an X)*

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [X] UTRAN [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 17/01/2000

Subject: Corrections on use of PUSCH power control info and minor corrections

3G Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Reason for change:

PUSCH power control info should be sent by CRNC with Physical shared channel allocation only.
Missing IE “Midamble configuration” is added.
Some Value ranges are included.
Several minor editorials.

Clauses affected: 10.1.17, 10.1.20, 10.1.21, 10.1.22, 10.1.28, 10.1.33, 10.1.40, 10.1.49, 10.1.52, 10.2.4.6.3, 10.2.5.7, 10.2.5.8, 10.2.5.10, 10.2.6.10, 10.2.6.31,10.2.6.44, new 10.2.6.x

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

10.1.17 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New U-RNTI	O		U-RNTI	
New C-RNTI	C - RACH/FACH		C-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
Phy CH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			For FACH/PCH
>References to system information blocks		0 to <MaxSysIn		Note 3

Information Element	Presence	Multi	IE type and reference	Semantics description
		foBlockFACHCount>		
>>Scheduling information				Note 3
CHOICE mode				
>TDD				
~~>>PICH info~~				
>>Uplink Timing Advance	O			
~~>>PUSCH power control info~~	~~O~~			
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			

Condition	Explanation
RACH/FACH	This information element is only included in the sent message when using RACH/FACH
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH
MaxRLcount	Maximum number of radio links to be set up

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.20 PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)

This message is used by UTRAN to assign physical resources to USCH/DSCH transport channels in TDD, for temporary usage by the UE.

RLC-SAP: TM or AM

Logical channel: SHCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
C-RNTI	M			
PUSCH allocation pending	O			
TrCH information elements				
~~TFCS identity~~	~~O~~			
PhyCH information elements				
PUSCH power control info	O			
Uplink timing advance info	O			
PUSCH info	O			
PDSCH info	O			

10.1.21 PUSCH CAPACITY REQUEST (TDD only)

This message is used by the UE for request of PUSCH resources to the UTRAN.

RLC-SAP: TM

Logical channel: SHCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
C-RNTI	M			
Measurement information elements				
Traffic amount information		1 to <R~~A~~BCount>		Send traffic amount information for each Radio ~~Access~~ Bearer in the message
>RB ID	M			
>RLC buffer payload	M			
>Measured results on RACH	O			

Multi Bound	Explanation
R~~A~~BCount	Number of traffic amount information in the message

10.1.22 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C - RACH/FACH			
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to reconfigure		0 to <MaxRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	O			Presence is FFS. For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info	O			
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to		

Information Element	Presence	Multi	IE type and reference	Semantics description
		<MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
~~>>PUSCH power control info~~	~~O~~			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

CHOICE *RLC info type*	**Condition under which the given *RLC info type* is chosen**
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.28 RADIO BEARER SETUP

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
CN information elements				
NAS binding info	M			
CN domain identity				
UE Information elements				
Activation time	O			
New C-RNTI	C – RACH/FACH		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to setup		1 to <MaxRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to be affected		0 to <MaxOtherRBcount>		
>RB identity	M			
>RB mapping info	M			
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH informationTransport channel identity		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system		0 to		Note 3

Information Element	Presence	Multi	IE type and reference	Semantics description
information blocks		<MaxSysInfoBlockFACHCount>		
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
~~>>PUSCH power control info~~	~~O~~			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
IfDPCH	This IE is only sent if "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddcount	Maximum number of Transport CHannels reconfigured or added
MaxRBcount	Maximum number of RBs that could be setup with this message
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

CHOICE *RLC info type*	**Condition under which the given *RLC info type* is chosen**
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.33 RRC CONNECTION RE-ESTABLISHMENT

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
New U-RNTI	O			
New C-RNTI	O			
Activation time	O			
Re-establishment timer	O			
CN information elements				
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O		GSM-MAP NAS system information	(Note1)
>CN domain specific GSM-MAP NAS system info	O			(Note1)
NAS binding info	C-RBsetup			
CN domain identity	C-RBsetup			
RB information to setup		0 to <MaxSetupRBcount>		
>RB identity	M			
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to release		0 to <MaxRetRBcount>		
>RB identity	M			
RB information to reconfigure		0 to <MaxReconRBcount>		
>RB identity	M			
>CHOICE *RLC info type*	O			
>>RLC info				FFS
>>Signalling radio bearer type				
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
Transport Channel Information Elements				
TFCS	O			For uplink TFCS
TFCS	O			For downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS

Information Element	Presence	Multi	IE type and reference	Semantics description
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Transport channel identity		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>>Transport channel identity	M			
>>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRlcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET info	O			UL/DL radio resource for CPCH control (Note3)
>>Default DPCH Offset Value	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
~~>>PUSCH power control info~~	~~O~~			

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 3: How to map UL and DL radio resource in the message is FFS.

Condition	Explanation
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
RBsetup	This information element is only sent when RB information to setup exists
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive
Signalling radio bearer type	

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains
MaxSetupRBcount	Maximum number of RBs to be setup
MaxRelRBcount	Maximum number of RBs to be released
MaxReconRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxRLcount	Maximum number of radio links

10.1.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Initial UE identity	M			
U-RNTI	M			
C-RNTI	O			Only if assigned to a common transport channel
Activation time	O			
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Capability update requirement	M			
RB information elements				
Signalling radio bearers		3 to 4		Information for signalling radio bearers, in the order RB 0 up to 3.
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
TrCH information elements				
TFCS	O			For Uplink TFCS
TFCS	O			For Downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
CPCH set ID	O			
Uplink transport channels				
Uplink transport channel information		1 to <MaxULTrCHCount>		
>Transport channel identity	M			
>TFS	M			
Downlink transport channels				
Downlink transport channel information		1 to <MaxDLTrCHCount>		
>Transport channel identity	M			
>TFS	M			
>Transparent mode signalling info	C if TM_DCH	0 or 1		
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
requirement				
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note 1)
>>Gated Transmission Control info	O, FFS			Note 2
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
~~>>PUSCH power control info~~	~~O~~			

Condition	Explanation
IfTM_DCH	This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands.
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxULTrCHCoun	Maximum number of new uplink transport channels
MaxDLTrCHCount	Maximum number of new downlink transport channels
MaxRLcoun	Maximum number of radio links to be set up

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive.

NOTE 1: How to map UL and DL radio resource in the message is FFS.

NOTE 2: The activation time should be present when the Gated Transmission control info is present in this message.

10.1.49 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C - RACH/FACH		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Reconfigured TrCH information		0 to <MaxReconTrCH>		
>Transport channel identity				
>TFS				
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconTrCHDRAC>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>>Silent period duration before release				
Downlink transport channels				
Reconfigured TrCH information		0 to <MaxReconTrCH>		
>Transport channel identity				
>TFS				
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
~~>>PUSCH power control info~~	~~O~~			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links to be set up
MaxReconcount	Maximum number of Transport Channels reconfigured
MaxReconTrCHDRAC	Maximum number of Transport CHannels which are controlled by DRAC and which are reconfigured
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3 The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.52 TRANSPORT FORMAT COMBINATION CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: TM, AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	C-notTM			
UE information elements				
Integrity check info	O			
TrCH information elements				
Choice channel requirement				
>TFC subset	O			For DPCH TFCS in uplink
>TFC Control duration	C-notTMopt			

Condition	Explanation
NotTM	The message type is not included when transmitting the message on the transparent mode signalling DCCH
NotTMopt	The information element is not included when transmitting the message on the transparent mode signalling DCCH and is optional otherwise.

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

10.2.4.6.3 Downlink RLC STATUS info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Timer_Status_Prohibit	O		Enumerated(160, 320, 640, 1280)	Minimum time in ms between STATUS reports
Timer_EPC	O		Enumerated(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Timer for EPC. Timer in ms
Missing PU Indicator	M		Boolean	Indicates if UE should send a STATUS report for each missing PU that is detected
Timer_STATUS_periodic	O		Enumerated(0.1,0.2, 0.3, 0.4, 0.5, 0.75, 1, 2)	Timer for periodic STATUS reports. Timer in seconds

10.2.5.7 Transport Format Combination Set

Indicates the allowed combinations of already defined Transport formats and the mapping between these allowed TFCs and the corresponding TFCI values.

For FDD, Where the UE is assigned access to one or more DSCH transport channels then the UTRAN has the choice of two methods for signalling the mapping between TFCI(field 2) values and the corresponding TFC:

Method #1 - TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given transport format combination (value of CTFC_DSCH). The CTFC_DSCH value specified in the first group applies for all values of TFCI(field 2) between 1 and the specified 'Max TFCI(field2) value'. The CTFC_DSCH value specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2) value' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value used by the UE in constructing its mapping table starting at the largest value reached in the previous group plus one.

Method #2 - Explicit

The mapping between TFCI(field 2) value and CTFC_DSCH is spelt out explicitly for each value of TFCI (field2).

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *DSCH*				
>FDD without access to DSCH assigned or TDD				This choice is made if the UE is not assigned any DSCH transport channels
>>CHOICE TFCS representation	M			
>>>Complete reconfiguration		1 to MaxTFCcount		
>>>>CTFC		1 to MaxTFCcount	Integer(0..MaxCTFC-1)	The first instance of the parameter *Transport format combination* corresponds to Transport format combination 0, the second to transport format combination 1 and so on. Integer number calculated according to clause 14.
>>>>CHOICE mode				
>>>>>FDD				
>>>>Gain Factor β_c	O		Integer (0.. 15)	For DPCCH or control part of PRACH
>>>>Gain Factor β_d	O		Integer (0..15)	For DPCCH or data part of PRACH
>>>Removal		1 to MaxDelTFCcount		
>>>>TFCI		1 to MaxDelTFCcount	Integer(0..MaxTFCIValue)	Removal of TFCI. The integer number(s) is a reference to the transport format combinations to be removed.
>>>Addition		1 to MaxAddTFCcount		
>>>>AddCTFC		1 to MaxAddTFCcount	Integer(0..MaxCTFC-1)	Addition of TFCI. The integer number(s) is the calculated transport format combination that is added. The new TFC(s) is inserted into the first available position(s) in the TFCI (counting from zero).
>>>>CHOICE mode				
>>>>>FDD				
>>>>Gain Factor β_c	O		Integer	For DPCCH or control part of

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			(0.. 15)	PRACH
>>>>>Gain Factor β_d	O		Integer (0..15)	For DPCCH or data part of PRACH
>FDD with access to DSCH assigned				This choice is made if the UE is assigned one or more DSCH transport channels
>>Length of TFCI2	M		Integer (1..9)	This IE indicates the length measured in number of bits of TFCI(field2)
>>Transport format combination_DCH		1 to <MaxTFCI_1_Combs>		The first instance of the parameter *Transport format combination_DCH* corresponds to TFCI (field 1) = 1, the second to TFCI (field 1) = 2 and so on.
>>>CTFC_DCH	M		Integer(0..MaxCTFC_DCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DSCH transport channels which may be assigned
>>Choice *Signalling method*				
>>>TFCI range				
>>>>TFC mapping on DSCH		1 to <MaxNoTFCIGroups>		
>>>>>Max TFCI(field2) value	M		Integer(1..512)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC_DSCH applies
>>>>>>CTFC_DSCH	M		Integer(0..MaxCTFC_DSCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned
>>>Explicit				
>>>>Transport format combination_DSCH		1 to <MaxTFCI_2_Combs>		The first instance of the parameter *Transport format combination_DSCH* corresponds to TFCI (field2) = 1, the second to TFCI (field 2) = 2 and so on.
>>>>>CTFC_DSCH	M		Integer(0..MaxCTFC_DSCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned

Range Bound	Explanation
MaxCTFC	Maximum value number of the CTFC value is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14.
MaxTFCCount	Maximum number of Transport Format Combinations.
MaxTFCValue	The max value of the Transport Format Combinations that currently is defined for this UE.
MaxAddTFCIcount	Maximum number of Transport Format Combinations to be added.
MaxDelTFCcount	Maximum number of Transport Format Combinations to be removed.
MaxTFCI_1_Combs	Maximum number of TFCI (field 1) combinations (given by 2 raised to the power of the length of the TFCI (field 1))

Range Bound	Explanation
MaxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI (field 2))
MaxNoTFCIGroups	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single value of CTFC_DSCH applies
MaxCTFC_DCH	Maximum value of CTFC_DCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DCH transport channels are taken into account in the calculation.
MaxCTFC_DSCH	Maximum value of CTFC_DSCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DSCH transport channels are taken into account in the calculation..

10.2.5.8 Transport Format Combination Set Identity (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TFCS ID	~~M~~O		Integer (~~0~~1...~~3~~8)	Indicates the identity of every TFCS within a UE. Default value is 1.
Shared Channel Indicator	~~O~~M		Boolean	Indicates use of shared channels.

10.2.5.10 Transport Format Set (TFS)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *Transport channel type*	M			
>Dedicated transport channels	M			
>>Dynamic Transport Format Information		1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	
>>>>CHOICE *Transparent mode RLC PDU size*				
>>>>>Size type 1				1 bit granularity
>>>>>>Size part 1	M		Enumerated(1..128)	
>>>>>Size type 2				8 bit granularity
>>>>>>Size part 1	M		Enumerated(136, 144..256)	
>>>>>>Size part 2	O		Integer (1..7)	Added to size part 1.
>>>>>Size type 3				16 bit granularity
>>>>>>Size part 1	M		Enumerated(272, 288..1024)	
>>>>>>Size part 2	O		Integer (1..15)	Added to size part 1.
>>>>>Size type 4				64 bit granularity
>>>>>>Size part 1	M		Enumerated(1088, 1152..4992)	
>>>>>>Size part 2	O		Integer (1..63)	Added to size part 1.
>>>>CHOICE *Acknowledged mode RLC PDU size*				
>>>>>Size type 1			Enumerated(24,32..272)	8 bit granularity
>>>>>Size type 2			Enumerated(304, 336..1040)	32 bit granularity
>>>>>Size type 3			Enumerated(1104, 1168..4944)	64 bit granularity
>>>>CHOICE *Unacknowledged mode RLC PDU size*				
>>>>>Size type 1			Enumerated(16,24..264)	8 bit granularity
>>>>>Size type 2			Enumerated(296,328..1032)	32 bit granularity 1-3 octets
>>>>>Size type 3			Enumerated(1096,1160..5000)	64 bit granularity 1-7octets
>>>CHOICE mode				
>>>>TDD				
>>>>>Transmission time interval	C-TTIdynamic	1 to <maxTTIcount>	Enumerated(10, 20, 40, 80)	
>>Semi-static Transport Format Information				
>>>Transmission time interval	C-TTIsemistatic		Enumerated(10, 20, 40, 80)	

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
>>>Type of channel coding			Enumerated(No coding, Convolutional, Turbo)	
>>>Coding Rate	C-Coding		Enumerated(1/2, 1/3)	
>>>Rate matching attribute	M		Integer(1..maxRM)	
>>>CRC size	M		Enumerated(0, 8, 12, 16, 24)	
~~>>>CHOICE mode~~				
~~>>>>TDD~~				
~~>>>>>2nd interleaving mode~~	~~O~~		~~Enumerated(Frame related, Timeslot related)~~	~~Frame or timeslot related interleaving. Default Frame related.~~
>Common transport channels				
>>Dynamic Transport Format Information		1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	
>>>CHOICE mode				
>>>>FDD				
>>>>>CHOICE *Transport block size*	C-Blocks			
>>>>>>Size type 1			Enumerated(48,56..296)	8 bit granularity
>>>>>>Size type 2			Enumerated(312, 328..1320)	16 bit granularity
>>>>>>Size type 3			Enumerated(1384, 1448..4968)	64 bit granularity
>>>>TDD				
>>>>>CHOICE *RLC mode*	C-Blocks			
>>>>>>CHOICE *Bit mode RLC PDU size*				
>>>>>>>Size type 1				1 bit granularity
>>>>>>>>Size part 1	M		Enumerated(1..128)	
>>>>>>>Size type 2				8 bit granularity
>>>>>>>>Size part 1	M		Enumerated(136, 144..256)	
>>>>>>>>Size part 2	O		Integer (1..7)	Bits Added to size part 1.
>>>>>>>Size type 3				16 bit granularity
>>>>>>>>Size part 1	M		Enumerated(272, 288..1024)	
>>>>>>>>Size part 2	O		Integer (1..15)	Bits Added to size part 1.
>>>>>>>Size type 4				64 bit granularity
>>>>>>>>Size part 1	M		Enumerated(1088, 1152..4992)	
>>>>>>>>Size part 2	O		Integer (1..63)	Bits Added to size part 1.
>>>>>>CHOICE *Octet mode*				

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
RLC PDU size				
>>>>>>>Size type 1				8 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(16,24..272)	
>>>>>>>Size type 2				32 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(304, 336..1040)	
>>>>>>>>Size Part 2	O		Integer (1..3)	Octets added to size part 1.
>>>>>>>Size type 3				64 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(1104, 1168..4944)	
>>>>>>>>Size Part 2	O		Integer (1..7)	Octets added to size part 1.
>>>>>MAC Header Type	O		Integer (1..7)	Default is DCH MAC header type (only needed for TDD mode)
>>Semi-static Transport Format Information				
>>>Transmission time interval	C-TTIsemistatic		Enumerated(10, 20, 40, 80)	
>>>Type of channel coding	M		Enumerated(No coding, Convolutional, Turbo)	
>>>Coding Rate	C-Coding		Enumerated(1/2, 1/3)	
>>>Rate matching attribute	M		Integer(1..maxRM)	
>>>CRC size	M		Enumerated(0, 8, 12, 16, 24)	

Range Bound	Explanation
maxTTIcount	Denotes the amount of different TTI that are possible for that transport format = 4.

Condition	Explanation
Blocks	This IE is only present if IE "Number of Transport Blocks" is greater than 0.
Coding	This IE is only present if IE "Type of channel coding" is "Convolutional"
TTIdynamic	This IE is mandatory if not defined as semistatic parameter. Otherwise it is absent.
TTIsemistatic	This IE is mandatory if not defined as dynamic parameter. Otherwise it is absent.

Range Bound	Explanation
MaxTFcount	Maximum number of different transport formats that can be included in the Transport format set for one transport channel is 32.
MaxRM	Maximum number that could be set as rate matching attribute for a transport channel is 256.

CHOICE *RLC mode*	Condition under which the given *RLC mode* is chosen
Bit mode RLC PDU size	The RLC entity mapped to this transport channels can generate bit specific RLC PDU sizes
Octet mode RLC PDU size	The RLC entity mapped to this transport channels can only generate octet aligned RLC PDU sizes

CHOICE *Transport channel type*	Condition under which the given *Transport channel type* is chosen
Dedicated transport channels	The transport channel that is configured with this TFS is of type DCH
Common transport channels	The transport channel that is configured with this TFS is of a type not equal to DCH

NOTE: The parameter "rate matching attribute" is in line with the RAN WG1 specifications. However, it is not currently in line with the description in 25.302.

10.2.6.10 Downlink DPCH power control information

This information element indicates the range of SIR target values and the initial SIR target value to be set in the UE on this physical, channel for the downlink inner loop power control.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE mode				
>FDD				
>>DPC Mode	M		Enumerated (mode0, mode1)	
Initial SIR target value	M		Enumerated(-10, -9.5..20)	Initial SIR value to be used for the DL closed loop power control. Granularity of 0.5 dB.
Min SIR target value	M		Enumerated(-10, -9.5..20)	Minimum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.
Max SIR target value	M		Enumerated(-10, -9.5..20)	Maximum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.

10.2.6.31 PUSCH power control info (TDD only)

Interference level measured for a frequency at the UTRAN access point used by UE to set PUSCH output power.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UL Maximum SIR	M			Maximum UE transmit power limit
UL target SIR	M		Enumerated (-11dB,-10.5dB ... 20dB)	
UL Minimum SIR	O			

10.2.6.44 Uplink DPCH power control info

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>DPCCH Power offset	M		Enumerated(-164, -162..-6)	In dB
>>Power Control Algorithm	M		Enumerated (algorithm 1 or algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
>>TPC step size	C-algorithm1		Enumerated (1dB, 2dB)	
>TDD				
>>UL Maximum SIR	M		Enumerated (-11dB,-10.5dB ... 20dB)~~Enumerated (.1dB steps)~~	Maximum UE transmit power limit
>>UL target SIR	O		Enumerated (-11dB,-10.5dB ... 20dB)	
>>UL Minimum SIR	O		Enumerated (-11dB,-10.5dB ... 20dB)	

Condition	Explanation
C-algorithm1	This IE shall be present when the PC algorithm equals algorithm 1

10.2.6.x Midamble configuration (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Midamble burst type 1	O		Enumerated(4,8,16)	Maximum number of midamble shifts for bursttype 1. Default is 8.
Midamble burst type 2	O		Enumerated(3,6)	Maximum number of midamble shifts for bursttype 2. Default is 3.

3GPP RAN WG2#11
Turin, Italy, Feb 28-Mar 03, 2000

Document R2-000601
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.331	CR	162r2	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 2000-02-20

Subject: UE individual DRX cycles in CELL_PCH and URA_PCH states

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change:

It is proposed to remove the broadcast of the IE "UTRAN DRX cycle length" from SIB type 2 for UTRAN connected mode as response to item 1 in the LS (R3-000392, to TSG-RAN WG2) LS on Paging related parameters/DRX cycles, Tdoc R2-000316.

It is proposed to remove the broadcast of the IE "DRX indicator" since it is not considered necessary to be able to go from IDLE mode directly to Cell_PCH or URA_PCH state.

Since different CN domains have different requirements for the maximum time it takes to page and get a page response from an UE it is proposed that UE should always use the shortest DRX cycle length, either as expected from any of the CN domains the UE is registered to without having a signalling connection or the DRX cycle length as expected from UTRAN.

Example:

The UE is in Cell_PCH state and have a signalling connection established to the PS domain. At the same time the UE is registered in the CS domain. Any person making a terminating voice call to this UE is expecting the user to answer within the typical delay time as experienced in e.g. GSM today.

It is proposed to enable the UE to have different DRX cycle lengths for CELL_PCH and URA_PCH states. The following changes are made when introducing that possibility:

1. When the IE "DRX cycle length coefficient" is sent to the UE together with the IE "DRX indicator" in UE dedicated messages it is used in either CELL_PCH or URA_PCH state, depending on the state to transit to.
2. When no IE "DRX cycle length coefficient" is sent to the UE together with the IE "DRX indicator" in UE dedicated messages, the IE"UTRAN DRX cycle length coefficient" sent in the RRC CONNECTION SETUP message is used.

Clauses affected: 8.1.1.5.2, 8.1.2.3, 8.3.1.5, 8.5.7.1.1, 8.5.7.3.2, 8.5.7.3.3, 10.1.40, 10.1.47.5.4

Other specs affected:	Other 3G core specifications		→ List of CRs:	
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	

help.doc

<---------- double-click here for help and instructions on how to create a CR

8.1.1.5.2 System Information Block type 2

If in connected mode the UE should store all relevant IEs included in this system information block. The UE shall also

- ~~use the IE "UTRAN_DRX_cycle length" to calculate frame number for the Paging Occasions and Page indicator as specified in TS 25.304.~~

- if in state CELL_FACH or CELL_PCH, start to perform periodical cell updates using the information in the IE "Information for periodic cell and URA update".

- if in state URA_PCH, start to perform periodical URA updates using the information in the IEs "URA identity" and "Information for periodic cell and URA update".

If in idle mode, the UE shall not use the values of the IEs in this system information block.

8.1.2.3 Reception of an PAGING TYPE 1 message by the UE

The UE shall in idle mode, CELL_PCH state and URA_PCH state receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in TS 25.304 and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in 8.5.7.1.1. For an UE in CELL_PCH state and URA_PCH state the paging occasions depend also on the IE "UTRAN DRX Cycle length coefficient" and the IE "DRX indicator", as specified in subclause 8.5.7.3.2 and 8.5.7.3.3 respectively. When the UE receives a PAGING TYPE 1 message, it shall check each occurrence of the IE "Paging record"

For each included paging record the UE shall compare the included identity with the identity of the UE according to the following:

An idle mode UE shall

- if the IE "paging originator" is CN, compare the included identities of type CN UE identity with all of its allocated CN UE identities.
- for each match, forward the identity and paging cause to the upper layer entity indicated by the IE "CN domain identity".
- store the paging cause to be included in the RRC connection establishment procedure.
- if the IE "paging originator" is UTRAN, ignore that paging record.

A connected mode UE shall;

- if the IE "paging originator" is UTRAN, compare the included identities of type "Connected mode identity" with its allocated U-RNTI.
- for each match,, the UE shall enter CELL_FACH state and perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.
- if the IE "paging originator" is CN, ignore that paging record.

If the IE "BCCH modification info" is included, the UE shall perform the actions as specified in subclause 8.1.1

8.3.1.5 Reception of the CELL UPDATE CONFIRM message by the UE

Upon receiving the CELL UPDATE CONFIRM message, the UE shall stop timer T302.

The UE shall act upon all received information elements as specified in 8.5.7, unless specified otherwise in the following.

If the CELL UPDATE CONFIRM message includes the IE "CN domain identity" and the IE "NAS system information", the UE shall forward the content of the IE "NAS system information" to the non-access stratum entity of the UE identified by the IE "CN domain identity".

If the CELL UPDATE CONFIRM message includes the IE "URA-Id" the UE shall store this URA identity.

If the CELL UPDATE CONFIRM message does not include IE "new C-RNTI", IE "new U-RNTI", IE "PRACH info" nor IE "Secondary CCPCH info", no RRC response message is sent to the UTRAN.

If the CELL UPDATE CONFIRM message includes the IE "new C-RNTI" and optionally the IE "new U-RNTI" but does not include IE "PRACH info" or IE "Secondary CCPCH info", the UE shall update its identities and transmit an RNTI REALLOCATION COMPLETE message on the uplink DCCH using the PRACH indicated in the broadcast system information.

If the CELL UPDATE CONFIRM message includes the IE "PRACH info" and/or the IE "Secondary CCPCH info", the UE shall

- Perform the actions stated in subclauses 8.5.7.6.2 and 8.5.7.6.3
- update its identities if the CELL UPDATE CONFIRM message includes the IE new C-RNTI" and optionally the IE "new U-RNTI"
- transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using the PRACH indicated in CELL UPDATE CONFIRM message

The UE shall enter a state according to subclause 8.5.8 applied on the CELL UPDATE CONFIRM message, unless specified otherwise below.

If the IE "Cell update cause" in CELL UPDATE message was set to "UL data transmission" or "paging response", the UE shall remain in CELL_FACH state.

If the IE "Cell update cause" in CELL UPDATE message was set to "periodic cell update" or "cell reselection", the UE shall return to the state it was in before initiating the cell update procedure.

~~If the CELL UPDATE CONFIRM message includes the IE "DRX cycle length coefficient", the UE shall update DRX cycle length.~~

In case none of the above conditions apply, the UE shall return to the state it was in before initiating the cell update procedure.

In case the UE ends in CELL_FACH or CELL_PCH state and periodic cell updating is configured, it shall reset timer T305.

In case the UE does not end in CELL_FACH state, it shall delete its C-RNTI.

If the UE remains in CELL_FACH state and the CELL UPDATE CONFIRM message includes the IE "New C-RNTI" the UE shall then resume data transmission on RB 2 and upward , if RLC-AM or RLC-UM is used on those radio bearers.

8.5.7.1.1 CN domain specific DRX cycle length coefficient

If the IE "CN domain specific DRX cycle length coefficient" is present, the UE shall use it to calculate the CN domain specific DRX cycle length, according to the following:

Set k to the value of the IE "CN domain specific DRX cycle length coefficient".

Store the result of 2^k *PBP, where PBP is the Paging Block Periodicity, as the CN domain specific DRX cycle length for thate CN domain as indicated by the IE "CN domain identity."

The UE shall determine its idle mode paging occasions and PICH monitoring occasions for that CN domain, according to TS 25.304, based on the stored CN domain specific DRX cycle length, when using DRX in idle mode.

8.5.7.3.2 UTRAN DRX Cycle length coefficient

If the IE "UTRAN DRX cycle length coefficient" is present, the UE shall use it to calculate the UTRAN DRX cycle length, ~~in connected mode~~ according to the following:

Set k to the value of the IE "UTRAN DRX cycle length coefficient".

Store the result of 2^k *PBP, where PBP is the Paging Block Periodicity, as the UTRAN DRX cycle length. ~~for connected mode.~~

The UE shall determine its connected mode paging occasions and PICH monitoring occasions in the same way as for idle mode, according to TS 25.304.

The DRX cycle length to use in connected mode is the shortest of ~~based on~~ the following:

- UTRAN ~~the stored~~ DRX cycle length ~~for connected mode~~
- CN domain specific DRX cycle length stored for any CN domain, when using Discontinuous Reception (DRX) in CELL_PCH and URA_PCH state.

The CN domain specific DRX cycle length stored for any CN domain is only used in Cell_PCH state and URA_PCH state if the UE is registered to that CN domain and no signalling connection exist to that CN domain.

8.5.7.3.3 DRX Indicator

If the IE "DRX Indicator" is included and set to 'DRX with cell updating', the UE shall

- if the IE “UTRAN DRX cycle length coefficient” is also included in the same message, use the IE “UTRAN DRX Cycle length coefficient” for calculating Paging Occasion and PICH Monitoring Occasion as specified in 8.5.7.3.2 in CELL_PCH state.

If the IE”DRX Indicator” is included and set to ‘DRX with URA updating’, the UE shall

- if the IE”UTRAN DRX cycle length coefficient” is also included in the same message, use the IE”UTRAN DRX Cycle length coefficient” for calculating Paging occasion and PICH Monitoring Occasion as specified in 8.7.3.2 in URA_PCH state.

~~use the current UTRAN DRX Cycle length coefficient as DRX cycle length coefficient in the formulas for calculating Paging Occasion and PICH Monitoring Occasion.~~

If the IE "DRX Indicator" is included and is set to 'no DRX' the UE shall

- if the IE “UTRAN DRX cycle length coefficient” is also included in the same message, ignore that IE.
- stop using DRX.

10.1.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Initial UE identity	M			
U-RNTI	M			
C-RNTI	O			Only if assigned to a common transport channel
Activation time	O			
UTRAN DRX cycle length coefficient	~~O~~M		DRX cycle length coefficient	
~~DRX Indicator~~	~~O~~			
Re-establishment timer	O			
Capability update requirement	M			
RB information elements				
Signalling radio bearers		3 to 4		Information for signalling radio bearers, in the order RB 0 up to 3.
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
TrCH information elements				
TFCS	O			For Uplink TFCS
TFCS	O			For Downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
CPCH set ID	O			
Uplink transport channels				
Uplink transport channel information		1 to <MaxULTrCHCount>		
>Transport channel identity	M			
>TFS	M			
Downlink transport channels				
Downlink transport channel information		1 to <MaxDLTrCHCount>		
>Transport channel identity	M			
>TFS	M			
>Transparent mode signalling info	C if TM_DCH	0 or 1		
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note 1)
>>Gated Transmission Control info	O, FFS			Note 2
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
IfTM_DCH	This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands.
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxULTrCHCoun	Maximum number of new uplink transport channels
MaxDLTrCHCount	Maximum number of new downlink transport channels
MaxRLcoun	Maximum number of radio links to be set up

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive.

NOTE 1: How to map UL and DL radio resource in the message is FFS.

NOTE 2: The activation time should be present when the Gated Transmission control info is present in this message.

10.1.47.5.4 System Information Block type 2

The system information block type 2 contains the URA identity and information for periodic cell and URA update. It also includes the UE timers and counters to be used in connected mode.

Information Element	Presence	Multi	IE type and reference	Semantics description
UTRAN mobility information elements				
URA identity		1 ..<maxURAcount>		
Information for periodic cell and URA update	M			
UE information				
UE Timers and counters in connected mode	M			
~~UTRAN DRX cycle length~~	~~M~~			
CHOICE *mode*				
>FDD				
>>TX Diversity Timing Mode	O		Enumerated(Normal Cell Mode,Macro Cell Mode)	*Note: The presence of this IE is mandatory if closed loop TX Diversity is used.*

Multi Bound	Explanation
MaxURAcount	Maximum number of URAs in a cell

3GPP TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

***Document* R2-000152**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.331	CR	163	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG2 **Date:** 2000-01-17

Subject: Correction to Transport Formation Combination Control procedure

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The Transport Format Combination Control message can be sent also in transparent mode

Clauses affected: 8.2.5

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

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<--------- double-click here for help and instructions on how to create a CR.

8.2.5 Transport format combination control

Figure 25: Transport format combination control, normal flow

8.2.5.1 General

The transport format combination control procedure is used to control the allowed uplink transport format combinations within the transport format combination set.

8.2.5.2 Initiation

The UTRAN shall transmit the TRANSPORT FORMAT COMBINATION CONTROL message on the downlink DCCH using AM, ~~or~~ UM or TM RLC. When not stated otherwise elsewhere, the UE may initiate the transport format combination control procedure also when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected.
UTRAN should not initiate a transport format combination control procedure, during while awaiting the completion of the following procedures:

- Radio bearer establishment (section 8.2.1)
- Radio bearer release (section 8.2.3)
- Radio bearer reconfiguration (section 8.2.2)
- Transport channel reconfiguration (section 8.2.4)
- Physical channel reconfiguration (section 8.2.6)

To change the sub-set of allowed transport format combinations, the UTRAN shall set the allowed TFCs in the IE "TFC subset". The network can optionally specify the duration for which a new TFC sub-set applies. The network shall do this by using the IE "TFC Control duration".
To completely remove the previous restrictions of allowed transport format combinations, the UTRAN shall set the "full transport format combination" in the IE "TFC subset".

3GPP TSG RAN WG2 #11
Turin, Italy 28th- 3rd Feb. 2000

Document R2-000587

CHANGE REQUEST

25.331	CR	164r3	Current Version:	3.1.0

For submission to:	TSG-RAN #7	for approval	X	strategic	
		for information		non-strategic	

Proposed change affects: (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 3rd Mar. 2000

Subject: Downlink outer loop power control

Work item:

Category:

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature	X		Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The quality target BLER for downlink outer loop power contol is added for each transport channel.

In RAN RRM ad hoc (9.-11-2., Turin), it was agreed to remove the BER as quality target for downlink outer loop power control. It was also agreed, that SIR targets would not be signalled to the UE from the UTRAN, because performance tests would test the application of downlink outer loop power control from the transport channel levels. Related changes have been updated in the revised CR.

Clauses affected: 8.2.9, 10.1.7, 10.1.22, 10.1.25, 10.1.28, 10.1.33, 10.1.40, 10.1.49, 10.2.5.x (new), 10.2.6.10, 10.2.6.11, 10.2.7.33, 14.7

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

8.2.9 Downlink outer loop control

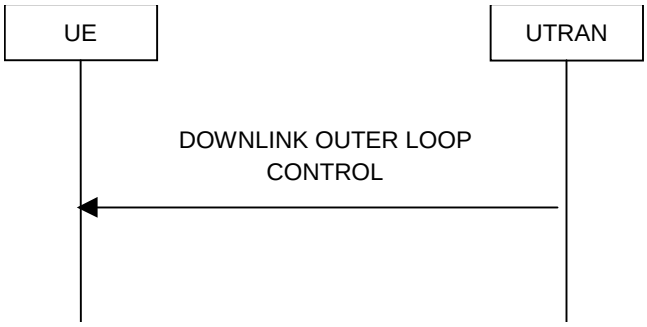

Figure 31: Downlink Outer Loop Control , normal flow

8.2.9.1 General

The downlink outer loop control procedure is used to control the downlink outer loop power control running in the UE.

8.2.9.2 Initiation

The UTRAN may transmit the DOWNLINK OUTER LOOP CONTROL message on the downlink DCCH using AM or UM RLC.

To prevent the UE from increasing its DL ~~Eb/No~~SIR target value above its current value, the UTRAN should set the "Downlink Outer Loop Control" IE to ~~TRUE~~"Increase not allowed".

To remove the previous restriction on the downlink outer loop power control, the UTRAN should set the "Downlink Outer Loop Control" IE to ~~FALSE~~"Increase allowed".

8.2.9.3 Reception of DOWNLINK OUTER LOOP CONTROL message by the UE

Upon reception of the DOWNLINK OUTER LOOP CONTROL message, the UE shall perform actions specified in 8.5.7 unless otherwise specified below.

The UE shall read the IE "Downlink Outer Loop Control".

If the IE "Downlink Outer Loop Control" is set to ~~TRUE~~"Increase not allowed", the UE shall prevent its DL ~~Eb/No~~SIR target value from increasing above the current value.

If the IE "Downlink Outer Loop Control" is set to ~~FALSE~~"Increase allowed", the UE shall remove the above restriction.

~~8.5.7.6.X Downlink DPCH power control information~~

~~If the IE Downlink DPCH power control information is included the UE shall~~

- ~~At all time keep the SIR target value at a lower value than the IE "Max SIR target" and at a higher value than the IE "Min SIR target"~~
- ~~Start or resume the downlink outer loop power control according to subclause 14.7. If IE "Initial SIR target" is present the UE shall start the downlink outer loop at that level.~~

10.1.7 DOWNLINK OUTER LOOP CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
PhyCH information elements				
Downlink Outer Loop Control	M			Indicates whether the UE is allowed or not to increase its SIR-target value above its current value
Downlink DPCH power control information	O			

10.1.22 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C - RACH/FACH			
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to reconfigure		0 to <MaxRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	O			Presence is FFS. For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info	O			
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		

Information Element	Presence	Multi	IE type and reference	Semantics description
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRlcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

CHOICE *RLC info type*	**Condition under which the given *RLC info type* is chosen**
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.25 RADIO BEARER RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C - RACH/FACH		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to release		1 to <MaxRBcount>		
>RB identity	M			
RB information to be affected		0 to <MaxOtherRBcount>		
>RB identity	M			
>RB mapping info	O			
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information Transport channel identity		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddFFSTrCH>		
>Transport channel identity	M			

Information Element	Presence	Multi	IE type and reference	Semantics description
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddFFSTrCH>		
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		Editor: this limit should probably also be MaxReconAddFFSTrCH
>Transport channel identity	M			
>TFS	M			
>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control information	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>Scheduling information				Note 3
Choice *mode*				
>FDD				
>>SSDT indicator				
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O, FFS			Note 3
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelRBcount	Maximum number of RBs to be released
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH
MaxReconAddFFSTrCH	Maximum number of transport channels to add and reconfigure

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH Info (for RACH)	
PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.28 RADIO BEARER SETUP

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
CN information elements				
NAS binding info	M			
CN domain identity				
UE Information elements				
Activation time	O			
New C-RNTI	C – RACH/FACH		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to setup		1 to <MaxRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to be affected		0 to <MaxOtherRBcount>		
>RB identity	M			
>RB mapping info	M			
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS

Information Element	Presence	Multi	IE type and reference	Semantics description
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH informationTransport channel identity		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3

Information Element	Presence	Multi	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
IfDPCH	This IE is only sent if "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddcount	Maximum number of Transport CHannels reconfigured or added
MaxRBcount	Maximum number of RBs that could be setup with this message
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

CHOICE *RLC info type*	**Condition under which the given *RLC info type* is chosen**
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.33 RRC CONNECTION RE-ESTABLISHMENT

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
New U-RNTI	O			
New C-RNTI	O			
Activation time	O			
Re-establishment timer	O			
CN information elements				
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O		GSM-MAP NAS system information	(Note1)
>CN domain specific GSM-MAP NAS system info	O			(Note1)
NAS binding info	C-RBsetup			
CN domain identity	C-RBsetup			
RB information to setup		0 to <MaxSetupRBcount>		
>RB identity	M			
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to release		0 to <MaxRetRBcount>		
>RB identity	M			
RB information to reconfigure		0 to <MaxReconRBcount>		
>RB identity	M			
>CHOICE *RLC info type*	O			
>>RLC info				FFS
>>Signalling radio bearer type				
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
Transport Channel Information Elements				
TFCS	O			For uplink TFCS
TFCS	O			For downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink

Information Element	Presence	Multi	IE type and reference	Semantics description
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Transport channel identity		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>>Transport channel identity	M			
>>TFS	M			
>>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRlcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET info	O			UL/DL radio resource for CPCH control (Note3)
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
>>PUSCH power control info	O			

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 3: How to map UL and DL radio resource in the message is FFS.

Condition	Explanation
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
RBsetup	This information element is only sent when RB information to setup exists
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive
Signalling radio bearer type	

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains
MaxSetupRBcount	Maximum number of RBs to be setup
MaxRelRBcount	Maximum number of RBs to be released
MaxReconRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxRLcount	Maximum number of radio links

10.1.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Initial UE identity	M			
U-RNTI	M			
C-RNTI	O			Only if assigned to a common transport channel
Activation time	O			
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Capability update requirement	M			
RB information elements				
Signalling radio bearers		3 to 4		Information for signalling radio bearers, in the order RB 0 up to 3.
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
TrCH information elements				
TFCS	O			For Uplink TFCS
TFCS	O			For Downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
CPCH set ID	O			
Uplink transport channels				
Uplink transport channel information		1 to <MaxULTrCHCount>		
>Transport channel identity	M			
>TFS	M			
Downlink transport channels				
Downlink transport channel information		1 to <MaxDLTrCHCount>		
>Transport channel identity	M			
>TFS	M			
>Quality target	O			For DCH
>Transparent mode signalling info	C if TM_DCH	0 or 1		
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note 1)
>>Gated Transmission Control info	O, FFS			Note 2
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
IfTM_DCH	This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands.
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxULTrCHCoun	Maximum number of new uplink transport channels
MaxDLTrCHCount	Maximum number of new downlink transport channels
MaxRLcoun	Maximum number of radio links to be set up

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive.

NOTE 1: How to map UL and DL radio resource in the message is FFS.

NOTE 2: The activation time should be present when the Gated Transmission control info is present in this message.

10.1.49 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New C-RNTI	C – RACH/FACH		C-RNTI	
New U-RNTI	O		U-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Reconfigured TrCH information		0 to <MaxReconTrCH>		
>Transport channel identity				
>TFS				
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconTrCHDRAC>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				

Information Element	Presence	Multi	IE type and reference	Semantics description
Downlink transport channels				
Reconfigured TrCH information		0 to <MaxReconTrCH>		
>Transport channel identity				
>TFS				
>Quality target	O			For DCH
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links to be set up
MaxReconcount	Maximum number of Transport Channels reconfigured
MaxReconTrCHDRAC	Maximum number of Transport CHannels which are controlled by DRAC and which are reconfigured
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3 The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.2.5.x Quality Target

Information Element/Group name	Presence	Mult	IE type and reference	Semantics description
BLER Quality value	M		Enumerated (0,1,..63)	The BLER quality value shall be set in the range 0 ≤ TrCH BLER ≤ 1 in the unit BLER_dB where: BLER_dB_0: TrCH BLER = 0 BLER_dB_1: -∞ < Log10(TrCH BLER) < -4.03 BLER_dB_2: -4.03 ≤ Log10(TrCH BLER) < -3.965 BLER_dB_3: -3.965 ≤ Log10(TrCH BLER) < -3.9 ... BLER_dB_61: -0.195 ≤ Log10(TrCH BLER) < -0.13 BLER_dB_62: -0.13 ≤ Log10(TrCH BLER) < -0.065 BLER_dB_63: -0.065 ≤ Log10(TrCH BLER) ≤ 0

10.2.6.10 Downlink DPCH power control information

~~range of SIR target values and the initial SIR target value to be set in the UE on this physical, channel for the downlink inner loop power control~~.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DPC Mode	M		Enumerated (~~mode0~~Single TPC, ~~mode1~~TPC triplet in soft)	"Single TPC" is DPC Mode=0 and "TPC triplet in soft" is DPC mode=1 in [TS 25.214]
~~Initial SIR target value~~	~~M~~O		~~Enumerated(-10, -9.5..20)~~	~~Initial SIR value to be used for the DL closed loop power control. Granularity of 0.5 dB.~~
~~Min SIR target value~~	~~M~~		~~Enumerated(-10, -9.5..20)~~	~~Minimum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.~~
~~Max SIR target value~~	~~M~~		~~Enumerated(-10, -9.5..20)~~	~~Maximum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.~~
~~Target vaule per CCTrCH~~		~~1 to <MaxCCTrCH>~~		
~~>DPDCH BER target~~	~~O~~		~~Enumerated(0, 0.02..5.10)~~	~~dB%=-Log10(Physical channel BER) Granularity 0.02~~
~~>DPCCH BER target~~	~~O~~		~~Enumerated(0, 0.02..5.10)~~	~~dB%=-Log10(Physical channel BER) Granularity 0.02~~

~~**Multi Bound**~~	~~**Explanation**~~
~~*MaxCCTrCH*~~	~~Maximum number of CCTrCH~~

10.2.6.11 Downlink Outer Loop Control

This information element indicates whether the UE is allowed or not to increase its downlink SIR target value above the current value.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DL Outer loop control	M		~~Boolean~~Enumerated(Increase allowed, Increase not allowed)	

10.2.7.33 Quality reporting quantity

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DL Transport Channel BLER ~~for each transport channel~~	M		Boolean	
~~Include T~~transport channels for BLER reporting	C BLER reporting	1~~0~~ to <MaxBLER>		The ~~D~~default, ~~(i.e. no transport channel identities) if information element~~ no transport channel identities~~is not~~ are present, is that the BLER is reported for all downlink transport channels
>Transport channel identity	M			
~~DL Physical channel BER~~	~~M~~		~~Boolean~~	
SIR	M		Boolean	

Multi Bound	Explanation
MaxBLER	Maximum number of transport channels with BLER measurements that can be included in a measurement report

Condition	Explanation
BLER reporting	This information element is absent if 'DL Transport Channel BLER' is 'No' and optional, if if 'DL Transport Channel BLER' is 'Yes'

14.7 Downlink outer loop power control

This function is implemented in the UE in order to set the ~~Eb/No~~SIR target value on each CCTrCH used for the downlink ~~closed~~ inner loop power control. This ~~Eb/No~~SIR value shall be adjusted~~is set~~ according to an autonomous function in the UE in order to achieve ~~some~~ the same measured quality as the quality target set by UTRAN. The quality target is set as ~~could be either one physical channel BER value for each CCTrCH or a~~ the transport channel BLER value for each transport channel as signalled by UTRAN.~~quality measurements performed in the UE, in order to maintain the quality requirements (FER or BER).~~

~~When physical channel BER is used the UE shall run a quality target control loop such that the quality requirement for each CCTrCH is met.~~ When transport channel BLER is used the UE shall run a quality target control loop such that the quality requirement is met for each transport channel, which has been assigned a BLER target~~ is met~~.

The UE shall set the ~~Eb/No~~SIR target within the range allocated by the RNC when the physical channel has been set up or reconfigured. It shall not increase the ~~Eb/No~~SIR target value before the ~~closed~~ inner loop power control has converged on the current value. The UE may estimate whether the ~~closed~~ inner loop power control has converged on the current value, by comparing the averaged measured ~~Eb/No~~SIR to the ~~Eb/No~~SIR target value.

If the UE has received a DL outer loop control message from UTRAN indicating that the ~~Eb/No~~SIR target value shall not be increased above the current value, it shall record the current value as the maximum allowed value for the outer loop power control function, until it receives a new DL outer loop control message from UTRAN indicating that the restriction is removed.

3GPP Meeting
San Diego, USA, 17-21 Jan. 2000

Document R2-000406

CHANGE REQUEST

25.331 **CR** **165r2** Current Version: 3.1.0

For submission to: TSG-RAN #7 for approval [X] for information [ ] strategic [ ] non-strategic [ ] *(for SMG use only)*

Proposed change affects: (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 28.02.2000

Subject: Redirection of RRC connection setup

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	[ ]	**Release:** Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]	Release 96	[ ]
B	Addition of feature	[X]	Release 97	[ ]
C	Functional modification of feature	[ ]	Release 98	[ ]
D	Editorial modification	[ ]	Release 99	[ ]
			Release 00	[ ]

Reason for change:

In the current RRC specification, the network has no explicit control over the precise actions that the UE takes after an RRC connection setup is rejected in the serving cell.

For load control purposes, it would be beneficial, if the UTRAN had the option of explicitly redirecting the UE to another carrier. This possibility complements and secures the usage of UE based on the broadcast channel. In the RRC connection rejection phase, it could also be possible to direct the UE to another system.

Clauses affected: 8.1.3.6, 10.2.3.41, 10.2.7

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

8.1.3.3 Reception of an RRC CONNECTION REQUEST message by the UTRAN

UTRAN should either

- transmit an RRC CONNECTION SETUP message on the downlink CCCH or
- transmit an RRC CONNECTION REJECT message on the downlink CCCH. In the RRC CONNECTION REJECT message, the UTRAN may direct the UE to another UTRA carrier or to another system. ~~On the UTRAN side, the procedure ends and~~ After the RRC CONNECTION REJECT message has been sent, all context information for the~~is~~ UE may be deleted in UTRAN.

8.1.3.6 Reception of an RRC CONNECTION REJECT message by the UE

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the IE "Initial UE identity" in the last RRC CONNECTION REQUEST message sent by the UE.

- ~~If the values are identical, the UE shall stop timer T300 and perform the actions in subclause 8.1.3.6.1~~
- ~~—~~If the values are different, the UE shall ignore the rest of the message
- If the values are identical, the UE shall stop timer T300 and perform the following actions:

If the IE "wait time" is ~~present~~<> '0', and

- If the IE "frequency info" is present and:
  - if V300 is equal to or smaller than N300, the UE shall initiate cell selection on the designated UTRA carrier. After having selected and camped on a cell, the UE shall re-initiate the RRC connection establishment procedure. The UE shall suppress cell reselection to another carrier for at least the time stated in the IE "wait time".
  - If a cell selection on the designated carrier fails, the UE shall wait at least the time stated in the IE "wait time", and then transmit a new RRC CONNECTION REQUEST message on the uplink CCCH of the original serving cell, restart timer T300 and increase counter V300. UE shall set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2.
  - If V300 is greater than N300 the UE shall enter idle mode. The procedure ends and a connection failure may be indicated to the non-access stratum. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2.
- If the IE "inter-system info" is present and:
  - if V300 is equal to or smaller than N300, the UE shall perform cell selection in the designated system. After having camped on a cell, the UE shall re-initiate the RRC connection establishment procedure. The UE shall suppress cell reselection to the original system for at least the time stated in the IE " wait time".
  - If cell selection in the designated system fails, the UE shall wait at least the time stated in the IE "wait time", and then transmit a new RRC CONNECTION REQUEST message on the uplink CCCH, restart timer T300 and increase counter V300. UE shall set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2.
- If neither the IEs "frequency info" nor "inter-system info" are present and:
  - ~~—~~if V300 is equal to or smaller than N300, the UE shall wait at least the time stated in the IE "wait time", transmit a new RRC CONNECTION REQUEST message on the uplink CCCH, restart timer T300 and increase counter V300. UE shall set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2~~.1~~
  - If V300 is greater than N300 the UE shall enter idle mode. The procedure ends and a connection failure may be indicated to the non-access stratum. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2

If the IE "wait time"~~ is not present~~ ='0', the UE shall

- ~~—~~enter idle mode. The procedure ends and a connection failure may be indicated to the non-access stratum. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2

10.1.4.9 RRC CONNECTION REJECT

This message is transmitted by the network when the requested RRC connection cannot be accepted.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Initial UE identity	M			
Rejection cause	M			
Wait time	MO			
CHOICE Redirection Information	O			
>Frequency info	MO			
>Inter-system info	MO			

10.2.3.41 Wait time

Wait time defines the time period the UE has to wait before repeating the rejected procedure.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Wait time			Integer(01.. 156)	Wait time in seconds The value 0 indicates that repetition is not allowed.

10.2.7.x Inter-system info

Inter-system info defines the target system for redirected cell selection.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Inter-system info			Enumerated (GSM,…)	

3GPP TSG-RAN WG2 Meeting #11
Turin, Italy, 28 Feb-3 Mar 2000

Document R2-000603
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	166r2	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*

(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG2 **Date:** 2000-02-23

Subject: Inter-frequency measurements in CELL_FACH state

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature	X		Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change:

A need to introduce a scheme for measurements in CELL_FACH state when the UE has to change frequency for the measurements and still be able to get all its messages sent on FACH.

Behaviour for the case when a UE shall do several measurements on e.g. both other frequencies and on another RAT is refined. Since, the k value in the formula for calculating the measurement occasion is an integer and has a small value range it should not be incremented for each extra RAT the UE should be able to measure.

Clauses affected: 8.4.1.6, 8.4.1.9, 8.5.x (new), 10.1.47.5.13, 10.1.47.5.14, 10.2.7.x (new)

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments: Changes compared to R2-000184 CR166 is highlighted in yellow.

help.doc

<--------- double-click here for help and instructions on how to create a CR.

8.4.1.6 Measurements after transition from CELL_DCH to CELL_FACH state

The UE shall obey the follow rules for different measurement types after transiting from CELL_DCH to CELL_FACH state:

Intra-frequency measurement

The UE shall stop intra-frequency type measurement reporting assigned in a MEASUREMENT CONTROL message.

After transition to CELL_FACH state, the UE shall begin monitoring neighbouring cells listed in the "intra-frequency cell info" received in "System Information Block 12" (or "System Information Block 11").

If the UE has no previously assigned, valid intra-frequency measurement for CELL_DCH state, the UE shall store "intra-frequency measurement reporting criteria", from "System Information Block 12" (or "System Information Block 11"), for use after a subsequent transition to CELL_DCH state.

If the UE receives the "Intra-frequency reporting quantity for RACH Reporting" and "Maximum number of Reported cells on RACH" IEs from "System Information Block 12" (or "System Information Block 11"), the UE use this information for reporting measured results in RACH messages.

Inter-frequency measurement

The UE shall stop the inter-frequency type measurement reporting assigned in a MEASUREMENT CONTROL message.

After transition to CELL_DCH state, the UE shall begin monitoring neighbouring cells listed in the "inter-frequency cell info" received in "System Information Block 12" (or "System Information Block 11").

The UE shall not measure on other frequencies except at the measurement occasions given in 8.5.x.

Inter-system measurement

The UE shall stop the inter-system type measurement reporting assigned in a MEASUREMENT CONTROL message.

After transition to CELL_DCH state, the UE shall begin monitoring neighbouring cells listed in the "inter-system" cell info" received in "System Information Block 12" (or "System Information Block 11").

The UE shall not measure on other systems except at the measurement occasions given in 8.5.x.

Quality measurement

The UE shall stop the quality type measurement reporting assigned in a MEASUREMENT CONTROL message after transition from CELL_DCH to CELL_FACH state.

UE internal measurement

The UE shall stop the UE internal measurement reporting type of measurement assigned in a MEASUREMENT CONTROL message.

Traffic volume measurement

The UE shall stop or continue traffic volume type measurement reporting assigned in a MEASUREMENT CONTROL message according to the following rules:

- If the IE "measurement validity" for this measurement has been assigned to value "release", the UE shall delete the measurement associated with the variable MEASUREMENT IDENTITY
- If the IE "measurement validity" for the measurement has been assigned to value "resume", and the IE "UE state for reporting" has been assigned to value "CELL_DCH", the UE shall stop measurement reporting and save the measurement associated with the variable MEASUREMENT IDENTITY to be used after the next transition to CELL_DCH state.
- If the IE "measurement validity" for the measurement has been assigned to value "resume", and the IE "UE state for reporting" has been assigned to value "all states", the UE shall continue measurement reporting.
- If the UE has previously stored a measurement, for which the IE "measurement validity" has been assigned to value "resume" and for which the IE "UE state for reporting" has been assigned to value "all states except CELL_DCH", the UE shall resume this measurement and associated reporting.

If no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message when transiting to CELL_FACH state, the UE shall begin a traffic volume type measurement according to traffic volume measurement type information received in "System Information Block 12" (or "System Information Block 11").

8.4.1.9 Measurements after transition from idle mode to CELL_FACH state

The UE shall obey the follow rules for different measurement types after transiting from idle mode to CELL_FACH state:

Intra-frequency measurement

The UE shall begin monitoring neighbouring cells listed in the "intra-frequency cell info" received in "System Information Block 12" (or "System Information Block 11").

If the UE receives "intra-frequency measurement reporting criteria", from "System Information Block 12" (or "System Information Block 11"), the UE shall store this information to use after a subsequent transition to CELL_DCH state.

If the UE receives the "Intra-frequency reporting quantity for RACH Reporting" and "Maximum number of Reported cells on RACH" IEs from "System Information Block 12" (or "System Information Block 11"), the UE use this information for reporting measured results in RACH messages.

Inter-frequency measurement

The UE shall begin monitoring neighbouring cells listed in the "inter-frequency cell info" received in "System Information Block 12" (or "System Information Block 11").

The UE shall not measure on other frequencies except at the measurement occasions given in 8.5.x.

Inter-system measurement

The UE shall begin monitoring neighbouring cells listed in the "inter-system" cell info" received in "System Information Block 12" (or "System Information Block 11").

The UE shall not measure on other systems except at the measurement occasions given in 8.5.x.

Traffic volume measurement

The UE shall begin a traffic volume type measurement according to traffic volume measurement type information received in "System Information Block 12" (or "System Information Block 11").

8.5.x Measurement occasion calculation

When in CELL_FACH state the UE shall perform inter-frequency and inter system measurements during the frame with the SFN value fulfilling the following equation:

((SFN div N) mod M_REP = C_RNTI mod M_REP

where

N is the TTI of FACH div 10ms

$M\_REP = 2^k$

k = k_UTRA – k_Inter_Rat_tot

The UE is allowed to measure on other occasions in case the UE moves out of service area or in case it can simultaneously perform the ordered measurements.

k_Inter_Rat_tot is the sum of all the k_Inter_Rat values corresponding to a system that the UE supports in addition to UTRA, and that have neighbours present in the measurement control message on system information sent from the current cell.

C_RNTI is the C-RNTI value of the UE

k_UTRA and k_Inter_Rat is read on system information in SIB 11 or 12 in the “FACH measurement occasion info” IE.

10.1.47.5.13 System Information Block type 11

The system information block type 11 contains measurement control information to be used in the cell. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
Measurement information elements				
FACH measurement occasion info	O			
Measurement control information		1 .. <maxMeasurementTypecount>		
>Measurement type	M			
>CHOICE Measurement				
>>Intra-frequency	C – Intrafreq			
>>>Intra-frequency cell info		1 .. <MaxIntraCells>		
>>>Intra-frequency Measurement quantity	M			
>>>Intra-frequency reporting Quantity for RACH Reporting	M			
>>>Maximum number of Reported cells on RACH	M			
>>Inter-frequency	C – Interfreq			
>>>Inter-frequency cell info		1 .. <MaxInterCells>		
>>>Inter-frequency Measurement quantity	M			
>>Inter-system	C – Intersys			
>>>Inter-system cell info	M	1 .. <MaxInterSysCells>		
>>>Inter-system measurement Quantity	M			
>>Traffic volume				
>>>Traffic volume measurement objects	O			
>>>Traffic volume measurement quantity	O			
>>UE Internal				
>>>UE internal measurement quantity	O			

Condition	Explanation
Measurement	The choice shall be consistent (same name) with the value of the 'Measurement type' IE
Intersys	Measurement type = Inter system measurement
Interfreq	Measurement type = Inter frequency measurement
Intrafreq	Measurement type = Intra frequency measurement
Blocktype	The presence of this IE depends on the definition of the system information block type.

Multi Bound	Explanation
MaxMeasTypeCount	Maximum number of measurement types
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.
MaxIntraCells	Maximum number of intra-frequency cells in a measurement control.
MaxInterCells	Maximum number of inter-frequency cells in a measurement control
MaxInterSysCells	Maximum number of inter-system cells in a measurement control.

10.1.47.5.14 System Information Block type 12

The system information block type 12 contains measurement control information to be used in connected mode.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
Measurement information elements				
FACH measurement occasion info	O			
Measurement control information		1 .. <maxMeasurementTypecount>		
>Measurement Identity Number	M			
>Measurement Type	M			
>CHOICE Measurement				
>>Intra-frequency	C – Intrafreq			
>>>Intra-frequency cell info		0 .. <MaxIntraCells>		
>>>Intra-frequency Measurement quantity	O			
>>>Intra-frequency Reporting quantity for RACH reporting	O			
>>>Maximum number of Reported cells on RACH	O			
>>>Intra-frequency reporting Quantity	O			
>>Inter-frequency	C – Interfreq			
>>>Inter-frequency cell Info		0 .. <MaxInterCells>		
>>>Inter-frequency Measurement quantity	O			
>>Inter-system	C – Intersys			
>>>Inter-system cell info		0 .. <MaxInterSysCells>		
>>>Inter-system measurement quantity	O			
>>Traffic volume				
>>>Traffic volume measurement objects	M			
>>>Traffic volume measurement quantity	M			
>>UE Internal				
>>>UE internal measurement quantity	M			

Condition	Explanation
Measurement	The choice shall be consistent (same name) with the value of the 'Measurement type' IE
Intersys	Measurement type = Inter system measurement
Interfreq	Measurement type = Inter frequency measurement
Intrafreq	Measurement type = Intra frequency measurement

Multi Bound	Explanation
MaxMeasTypeCount	Maximum number of measurement types
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.
MaxIntraCells	Maximum number of intra-frequency cells in a measurement control.
MaxInterCells	Maximum number of inter-frequency cells in a measurement control
MaxInterSysCells	Maximum number of inter-system cells in a measurement control.

Option	Default value
All optional elements	If not present, the value shall be assumed to be that indicated for in idle mode in SIB 11.

10.2.7.x FACH measurement occasion info

NOTE : Only for FDD

Information Element	Presence	Multi	IE type and reference	Semantics description
k_UTRA	M		DRX cycle length coefficient 10.2.3.11	
Other RAT present in inter-system cell info		1 to <MaxInterRat>		
>RAT type	M		Enumerated(GSM, IS2000 Spare3..Spare16)	
>k_Inter_Rat	M		Integer(0..12)	

Multi Bound	Explanation
MaxInterRat	Maximum number of other radio access technologies that can be present in the inter-system cell info

3GPP TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

Document R2000192
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.331	CR	167	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG Use only)
list expected approval meeting # here ↑		For information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 2000-01-15

Subject: List of found editorial mistakes in the Dec99 version of 25.331 (V3.1.0)

Work item: Agenda item 8.10

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification	X		Release 99	X
				Release 00	

Reason for change:

Clauses affected: 10.1.2.1 , 10.2.6.9 , 10.2.7.9 , 10.2.7.41

Other specs Affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:


help.doc

<--------- double-click here for help and instructions on how to create a CR.

10.1.21 PUSCH CAPACITY REQUEST (TDD only)

This message is used by the UE for request of PUSCH resources to the UTRAN.

RLC-SAP: TM

Logical channel: SHCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
C-RNTI	M			
Measurement information elements				
Traffic amount information		1 to <RABCount>		Send traffic amount information for each Radio ~~Access~~ Bearer in the message
>RB ID	M			
>RLC buffer payload	M			
>Measured results on RACH	O			

Multi Bound	Explanation
RABCount	Number of traffic amount information in the message

10.2.6.9 Downlink DPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>DL channelisation code		1 to <maxChan count>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	O		Integer (0..14)	
>>>Spreading factor	M		Enumerated(4, 16, 32, 64, 128, 256, 512)	
>>>Code number	M		Integer(0..maxCodeNum)	
>>Fixed or Flexible Position	M		Enumerated (Fixed, Flexible)	
>>TFCI existence	M		Boolean	
>>Number of bits for Pilot bits	C-SF		Enumerated (2,4,8 bits)	
>>TX Diversity Mode	M			
>>SSDT Cell Id	O			
>TDD				
>>Activation Time	O		Integer (0...255)	Frame number start of allocation period. Default is activation time in UE information elements.
>>Duration	O		Integer (0...255)	Total number of frames. Default = 0 (for infinite)
>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>Puncturing Limit	M			
>>Repetition period	O		Integer (1 ... Repetition period -1)	Repetition period of the DPCHs. Default value is 1.
>>Repetition length	O			Length of the allocation for each repetition period. Default value is 1.
>>Individual Timeslot info		1 to < max Timeslot count>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
>>>channelisation code		1 to <max Codes count>	Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)...(16/16))	The first instance of the parameter Channelisation code corresponds to the first DPCH in that timeslot that shall be used first by the physical layer, the second to the DPCH in that timeslot that shall be used second and so on.
>>>Timeslot	M		Integer (0...14)	Timeslot within a frame.
>>>TFCI presence	O		Boolean	If TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.
>>>Burst type	O		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. Default is burst type 1.
>>>Midamble shift	O		Integer (0...MaxMidambleShift – 1)	Midamble shift for this timeslot. Default is set by layer 1

Condition	Explanation
~~*STTD*~~	~~This IE is only sent if STTD is applied~~
SF	This IE is only sent if SF=128 or 256 is applied. If SF=256, value is 2,4 or 8 If SF=128, value is 4 or 8

Range Bound	Explanation
MaxChancount	Maximum number of channelisation codes used for DL DPCH
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxTimeslotcount	Maximum number of timeslots used for DPCHs
MaxCodesCount	Maximum number of codes for one timeslots
MaxMidambleShift	Maximum number of Midamble Shifts

10.2.7.9 Inter-system measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-system measurements.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Event ID	M			
>>Frequency	M			
>>BSIC	M			

~~**Condition**~~	~~**Explanation**~~
~~*GSM*~~	~~This information element is only sent when the system being measured is a GSM system~~

10.2.7.41 Traffic volume reporting quantity

Contains the reporting quantity information for a traffic volume measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
RLC buffer payload for each RB	M		Boolean	
Average RLC buffer payload for each R~~A~~B	M		Boolean	
Variance of RLC buffer payload for each R~~A~~B	M		Boolean	

1 References

[1] 3GPP TS 25.331 v3.1.0 , RRC Protocol Specification, Dec 1999

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Document R2-000245
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	168r1	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 19h Jan 2000

Subject: Transport block size

Work item:

Category: *(only one category Shall be marked With an X)*

F	Correction	
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	X
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change:

Based on R2-000021, Transport block size=0 is proposed. This concept is proposed to measure the BLER even if there is no RLC PDU to receive by attaching parity bits.
Instead of specifying that “no transport block sent on a physical CH” = ”parity bits attached”, it is proposed to specify that “no transport block sent on a transport CH” = ”parity bits attached”.
The reason for this is that BLERs of the transport CHs mapped on a physical channel are different among each other since they may have different FEC and/or rate matching values.
In the R2-00021, the following definition is proposed.

If the number of transport blocks =0, the parity bits need not to be attached.
If the transport block size=0, the parity bits need to be attached.

This implies that if BLER measurement is needed, the number of transport blocks should be equal to or more than “1” and, at the same time, the transport block size =“0” should be used.
Therefore in TS25.331, to measure BLER in case of no RLC PDU to receive, it can be described by setting transport format as follows in dedicated transport CH mode;

the number of transport blocks<>0, and
*Optional IE “*CHOICE *Bit mode RLC PDU size” : absent, and*
*Optional IE ”*CHOICE *Octet mode RLC PDU size” : absent*

Also in the same way, BLER can be measured in common transport CH mode.

Editorial mistakes are also corrected on “IE type and reference”. Some values were unable to describe in the current version.

Clauses affected: 10.2.5.10

Other specs Affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

help.doc

<---------- double-click here for help and instructions on how to create a CR.

10.2.5.4 Transport Format Set (TFS)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *Transport channel type*				
>Dedicated transport channels				
>>Dynamic Transport Format Information		1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	Note
>>>CHOICE *RLC mode*	O~~C-Blocks~~			
>>>>CHOICE *Bit mode RLC PDU size*				
>>>>>Size type 1				1 bit granularity
>>>>>>Size part 1	M		Enumerated(1..127~~8~~)	
>>>>>Size type 2				8 bit granularity
>>>>>>Size part 1	M		Enumerated(128,136,~~144~~..248~~256~~)	
>>>>>>Size part 2	O		Integer (1..7)	Bits Added to size part 1.
>>>>>Size type 3				16 bit granularity
>>>>>>Size part 1	M		Enumerated(256, 272, ~~288~~..1008~~1024~~)	
>>>>>>Size part 2	O		Integer (1..15)	Bits Added to size part 1.
>>>>>Size type 4				64 bit granularity
>>>>>>Size part 1	M		Enumerated(1024, 1088, ~~1152~~..4992)	
>>>>>>Size part 2	O		Integer (1..63)	Bits Added to size part 1.
>>>>CHOICE *Octet mode RLC PDU size*				
>>>>>Size type 1				8 bit granularity
>>>>>>Size Part 1	M		Enumerated(16,24..264~~272~~)	
>>>>>Size type 2				32 bit granularity
>>>>>>Size Part 1	M		Enumerated(272, 304, ~~336~~..1008~~1040~~)	
>>>>>>Size Part 2	O		Integer (1..3)	Octets added to size part 1.
>>>>>Size type 3				64 bit granularity
>>>>>>Size Part 1	M		Enumerated(1040, 1104, ~~1168~~..4944)	
>>>>>>Size Part 2	O		Integer (1..7)	Octets added to size part 1.
>>Semi-static Transport Format Information				
>>>Transmission time interval	M		Enumerated(10, 20, 40, 80)	
>>>Type of channel coding	M		Enumerated(No coding, Convolutional, Turbo)	
>>>Coding Rate	C-Coding		Enumerated(	

			1/2, 1/3)	
>>>Rate matching attribute			Integer(1..maxRM)	
>>>CRC size	M		Enumerated(0, 8, 16, 24)	

>Common transport channels				
>>Dynamic Transport Format Information		1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	Note
>>>CHOICE mode				
>>>>FDD				
>>>>>CHOICE *Transport block size*	OC~~-Blocks~~			
>>>>>>Size type 1			Enumerated(48,56..296)	8 bit granularity
>>>>>>Size type 2			Enumerated(312, 328..1320)	16 bit granularity
>>>>>>Size type 3			Enumerated(1384, 1448..4968)	64 bit granularity
>>>>TDD				
>>>>>CHOICE *RLC mode*	OC~~-Blocks~~			
>>>>>>CHOICE *Bit mode RLC PDU size*				
>>>>>>>Size type 1				1 bit granularity
>>>>>>>>Size part 1	M		Enumerated(1..1278)	
>>>>>>>Size type 2				8 bit granularity
>>>>>>>>Size part 1	M		Enumerated(128,136,144..248256)	
>>>>>>>>Size part 2	O		Integer (1..7)	Bits Added to size part 1.
>>>>>>>Size type 3				16 bit granularity
>>>>>>>>Size part 1	M		Enumerated(256, 272, 288..1008~~10~~24)	
>>>>>>>>Size part 2	O		Integer (1..15)	Bits Added to size part 1.
>>>>>>>Size type 4				64 bit granularity
>>>>>>>>Size part 1	M		Enumerated(1024, 1088, 1152..4992)	
>>>>>>>>Size part 2	O		Integer (1..63)	Bits Added to size part 1.
>>>>>>CHOICE *Octet mode RLC PDU size*				
>>>>>>>Size type 1				8 bit granularity
>>>>>>>Size Part 1	M		Enumerated(16,24..264272)	
>>>>>>>Size type 2				32 bit granularity
>>>>>>>Size Part 1	M		Enumerated(272, 304, 336..1008~~10~~40)	
>>>>>>>Size Part 2	O		Integer (1..3)	Octets added to size part 1.
>>>>>>>Size type 3				64 bit granularity
>>>>>>Size Part 1	M		Enumerated(1040, 1104, 1168..4944)	
>>>>>>Size Part 2	O		Integer (1..7)	Octets added to size part 1.

>>>>>MAC Header Type	O		Integer (1..7)	Default is DCH MAC header type (only needed for TDD mode)
>>Semi-static Transport Format Information				
>>>Transmission time interval	M		Enumerated(10, 20, 40, 80)	
>>>Type of channel coding	M		Enumerated(No coding, Convolutiona l, Turbo)	
>>>Coding Rate	C-Coding		Enumerated(1/2, 1/3)	
>>>Rate matching attribute	M		Integer(1..m axRM)	
>>>CRC size	M		Enumerated(0, 8, 12, 16, 24)	

Note: If the number of transport blocks<>0, and Optional IEs "CHOICE RLC mode" or "CHOICE Transport block size" is absent, it implies that no RLC PDU data exists but only parity bits exist. If the number of transport blocks=0, it implies that neither RLC PDU data nor parity bits exists.

Condition	**Explanation**
~~*Blocks*~~	~~This IE is only present if IE "Number of Transport Blocks" is greater than 0.~~
Coding	This IE is only present if IE "Type of channel coding" is "Convolutional"

Range Bound	**Explanation**
MaxTFcount	Maximum number of different transport formats that can be included in the Transport format set for one transport channel is 32.
MaxRM	Maximum number that could be set as rate matching attribute for a transport channel is 256

CHOICE *RLC mode*	**Condition under which the given *RLC mode* is chosen**
Bit mode RLC PDU size	The RLC entity mapped to this transport channels can generate bit specific RLC PDU sizes
Octet mode RLC PDU size	The RLC entity mapped to this transport channels can only generate octet aligned RLC PDU sizes

CHOICE *Transport channel type*	**Condition under which the given *Transport channel type* is chosen**
Dedicated transport channels	The transport channel that is configured with this TFS is of type DCH
Common transport channels	The transport channel that is configured with this TFS is of a type not equal to DCH

<Note: The parameter "rate matching attribute" is in line with the RAN WG1 specifications. However, it is not currently in line with the description in 25.302.>

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Document R2-000232
e.g. for 3GPP use the format TP-99xxx
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CHANGE REQUEST

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25.331	CR	169r1	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN#7	for approval	X	Strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME		UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG2 **Date:** 17th Jan 2000

Subject: Cell Access Restriction

Work item:

Category: *(only one category Shall be marked With an X)*			**Release:**	
F	Correction		Phase 2	
A	Corresponds to a correction in an earlier release		Release 96	
B	Addition of feature		Release 97	
C	Functional modification of feature	X	Release 98	
D	Editorial modification		Release 99	X
			Release 00	

Reason for change: The concept of Access Class in GSM is proposed for UTRAN cell access restriction scheme. Currently there is 1 bit parameter “Cell barred” in IE “Cell Access Restriction” for UTRAN cell access restriction. Addition to this IE, “Access class barred” for each access class is proposed to initiate or release the restriction gradually.

Clauses affected: 10.2.2.1 Cell Access Restriction

Other specs Affected:			
Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

10.2.2 UTRAN mobility Information elements

10.2.2.1 Cell Access Restriction

Indicates the restrictions to cell access.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell Barred	M		Boolean	
Access Class Barred	M	16	Boolean	The first instance of the parameter corresponds to Access Class 0, the second to Access Class 1 and so on up to Access Class 15. UE reads this IE of its access class stored in SIM.
Cell Reserved for operator use	M		Boolean	
Cell Reserved for SoLSA exclusive use	M		Boolean	

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Document R2-000197
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	170	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 17th Jan 2000

Subject: Editorial Modification

Work item:

Category: *(only one category Shall be marked With an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification	X		Release 99	X
				Release 00	

Reason for change:

The editorial mistakes were found in the current version. These are corrected.

1. Name of the information element and reference for "U/C-RNTI" is corrected. Order of the "U-RNTI" and "C-RNTI" is aligned to "U-RNTI" first, C-RNTI second in the message table.
2. MaxSysInfoFACHCount -> MaxSysInfoBlockFACHCount
3. The semantic description of "AM_RLC error indication" is moved to section 10.2.3.2.
4. The usage of the "Presence column" is corrected in all the IEs.
5. FFS in "PRACH info (for FAUSCH) is deleted.
6. "Integrity check info" is added in the following messages.
   - DL Direct Transfer
   - RRC STATUS
   - SIGNALLING CONNECTION RELEASE
   - TRANSPORT FORMAT COMBINATION CONTROL
   - UPLINK DIRECT TRANSFER
7. "Measurement reporting quantity" -> "Reporting quantity".
8. "Intra-system measurement" -> "Inter-system measurement".
9. Editorial corrections are made in the message which had 2 UE information element groups.
10. Editorial corrections are made in the message which had 2 CN information element groups.
11. IE type of the IE "Re-establishment timer" is copied from section 13.1 "Timers for UE".
12. In IEs for "CHOICE mode", order of the IE list is aligned to FDD first, TDD second.
13. "Deleted TrCH information Transport channel identity" -> "Deleted TrCH information".
14. "MaxReconFFSAddTrCH" -> "MaxReconAddTrCH".
15. Editor's note in the "Added or Reconfigured TrCH information" is removed.
16. In RRC Connection Re-establishment message, the following IEs are added since they were missing.
    - "PDCP info"
    - "References to system information blocks"
    - "Scheduling information"
17. "Signalling radio bearer type" is removed since it is not in use anymore.
18. In UL Direct Transfer message, "Measured results" -> "Measured results on RACH".
19. Information for periodic cell and URA update (Section10.2.2.4) is refined.
20. IE Types of "UE Timers and Counters in connected mode" are copied from section 13.1 Timers for UE".
21. The detail IEs for UE Radio Capability are removed since they are under study on TR on UE radio Capability and existing ones are not valid anymore.
22. Timers and counters which are not in used in idle mode is removed from "UE Timers and Counters in idle mode".

23. “PRACH power control info” is no longer in use. Therefore it is removed.
24. IE type of the “Constant value” is copied from the “PRACH power control info”. “in dBm” is changed to “in dB”.
25. IE type of the “PRACH power offset” is copied from the “PRACH power control info”.
26. IE type of the “UL interference” is copied from the “PRACH power control info”.
27. “Downlink DPCH compressed mode info” is aligned to “DPCH compressed mode info”.
28. Semantic description for Primary CPICH Tx power in section 10.2.7.2 “inter-frequency cell info” is corrected since it was added in the wrong IE.
29. Presence and IE type for IEs in “Intra-frequency reporting quantity for RACH reporting” are aligned with other reporting quantities.
30. “Measurement results on RACH” -> “Measured results on RACH”.
31. The Range for the Traffic volume measurement object (section 10.2.7.38) was missing. “1 to <MaxTrCHcount>” is added.
32. “Value tag” in “BCCH modification info”(section 10.2.8.1) is removed since it is no longer in use. Instead MIB value tag is used.
33. In section 10.2.8.6 Scheduling information, the description in the default value for SIB_POS offset info was incorrect. Therefore it was corrected.
34. Value range for timers and counters for UE (section 13.1, 13.3) are added. They are copied from IE types of the timers.

Clauses affected: 10.1, 10.2, 13, 14.10

Other specs Affected:			
Other 3G core specifications		→	List of CRs:
Other GSM core specifications		→	List of CRs:
MS test specifications		→	List of CRs:
BSS test specifications		→	List of CRs:
O&M specifications		→	List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

10.1.1 ACTIVE SET UPDATE (FDD only)

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
New U-RNTI	O		U-RNTI	~~New U-RNTI~~
Activation time	O			
Ciphering mode info	O			
CN information elements				
PLMN identity	O			(Note 2)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note 2)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note 2)
Phy CH information elements				
Maximum allowed UL TX power	O			
Radio link addition information		0 to <MaxAddRLcount>		Radio link addition information required for each RL to add
>TPC combination index	M			
>Primary CPICH info	M			Note 1
>TFCI combining indicator	O			
>Downlink DPCH info	M			
>Secondary CCPCH Info	O			Note 2
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 2
>>Scheduling information				Note 2
Radio link removal information		0 to <MaxDelRLcount>		Radio link removal information required for each RL to remove
>Primary CPICH info	M			Note 1
SSDT indicator	O			
Gated Transmission Control Info	O			

Multi bound	Explanation
MaxAddRLcount	Maximum number of radio links which can be added
MaxDelRLcount	Maximum number of radio links which can be removed/deleted
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH

NOTE 1: If it is assumed that primary CPICH downlink scrambling code is always allocated with sufficient reuse distances, primary CPICH downlink scrambling code will be enough for designating the different radio links.

NOTE 2: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.2 ACTIVE SET UPDATE COMPLETE (FDD only)

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.3 ACTIVE SET UPDATE FAILURE (FDD only)

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.4 CELL UPDATE

This message is used by the UE to initiate a cell update procedure.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
U-RNTI	M			
Cell update cause	M			
AM_RLC error indication	O			~~Indicates AM_RLC unrecoverable error occurred on c-plane in the UE~~
Measurement information elements				
Measured results on RACH	O			

10.1.5 CELL UPDATE CONFIRM

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
New U-RNTI	O		U-RNTI	
New C-RNTI	O		C-RNTI	
RLC re-configuration indicator	~~C-AM_RLC_recon~~O			
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Ciphering mode info	O			
UTRAN mobility information elements				
URA identifier	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1,2)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1,2)

Information Element	Presence	Multi	IE type and reference	Semantics description
Physical CH information elements				
Uplink Radio Resources				
Maximum allowed ULTX power	O			
PRACH info (for RACH)	O			
CHOICE *mode*				
>FDD				
>>PRACH info (for FAUSCH)	O ~~(FFS)~~			
Downlink Radio Resources				
CHOICE *mode*				
>FDD				
>>Primary CPICH info	O			
>TDD				
>>Primary CCPCH info	O			
Secondary CCPCH info	O			

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

Condition	Explanation
~~*AM_RLC_recon*~~	~~This IE is only sent when the UTRAN requests AM RLC re-configuration~~

NOTE 1: It depends on the length of these information whether this message can be used to notify these information to UE.

NOTE 2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

10.1.6 DOWNLINK DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN -> UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CN information elements				
CN Domain Identity	M			
NAS message	M			

10.1.7 DOWNLINK OUTER LOOP CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
PhyCH information elements				
Downlink Outer Loop Control	M			Indicates whether the UE is allowed or not to increase its SIR-target value above its current value

10.1.8 HANDOVER TO UTRAN COMMAND

NOTE: Functional description of this message to be included here

RLC-SAP: N/A

Logical channel: N/A

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
UE information elements				
New U-RNTI	M		U-RNTI	
Activation time	O			
Ciphering algorithm	O		As defined in 10.2.3.6	Included in case of change of algorithm during handover
RB information elements				
Predefined radio configuration identity	M			
PhyCH information elements				
Frequency info_2	M			
>UARFCN uplink (Nu)	M		As defined in 10.2.6.14	
>Radio access mode	M		As defined in 10.2.6.14	
Maximum allowed UL TX power	M			
Uplink DPCH power control info_2	M			
>DPDCH power offset	M		As defined in 10.2.6.44	
>>Power Control Algorithm	M		Enumerated (algorithm 1 or algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
>TPC step size	C-algorithm1		As defined in 10.2.6.44	
Uplink radio resource information				
>Uplink DPDCH info_2	M			
>>Scrambling code type	M		As defined in 10.2.6.43	
>>Scrambling code number	M		As defined in 10.2.6.43	
>>DPDCH channelisation code	M		As defined in 10.2.6.43	
Downlink radio resource information				
>Downlink DPCH power control info	M			
>Downlink information		1 to <Max RIcount>		Send downlink information for each radio link to be set-up
>>Primary CCPCH info_2	M			
>>>Primary scrambling code	M		As defined in 10.2.6.29	
>>Downlink DPDCH info_2	M			
>>>Secondary scrambling code	O		As defined in 10.2.6.9	
>>>Spreading factor	M		As defined in 10.2.6.9	
>>>Code number	M		As defined in	

Information Element	Presence	Multi	IE type and reference	Semantics description
			10.2.6.9	

10.1.9 INITIAL DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE -> UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CN information elements				
Service Descriptor	M			
Flow Identifier	M			Allocated by UE for a particular session
CN domain identity	M			
NAS message	M			
Measurement information elements				
Measured results on RACH	O			

10.1.10 INTER-SYSTEM HANDOVER COMMAND

This message is used for handover from UMTS to another system e.g. GSM. One or several messages from the other system can be included in the Inter-System message information element in this message. These messages are structured and coded according to that systems specification.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Activation time	O			
Other information Elements				
Inter-System message	M			

10.1.11 INTER-SYSTEM HANDOVER FAILURE

This message is sent on the RRC connection used before the Inter-System Handover was executed. The message indicates that the UE has failed to seize the new channel in the other system.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Inter-System handover failure cause	O			FFS
Other Information Elements				
Inter-System message	O			

10.1.12 MEASUREMENT CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Measurement Information elements				
Measurement Identity Number	M			
Measurement Command	M			
Measurement Type	C Setup			
Measurement Reporting Mode	C NotRelease			
Additional measurement identity number		0 to <MaxAdditionalMeas>		
CHOICE Measurement				
>Intra-frequency				
>>Intra-frequency cell info		1 to <MaxIntraCells>		Measurement object
>>Intra-frequency measurement quantity	C event trigger			
>>Intra-frequency ~~measurement~~ reporting quantity	O			
>>Maximum number of reporting cells	O			
>>Measurement validity	O			
>>**CHOICE report criteria**				
>>>Intra-frequency measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>Inter-frequency				
>>Inter-frequency cell info		1 to <MaxInterCells>		Measurement object
>>Inter-frequency measurement quantity	C event trigger			
>>Inter-frequency ~~measurement~~ reporting quantity	O			
>>Maximum number of reporting cells	O			
>>Measurement validity	O			
>>Inter-frequency set Update				
>>**CHOICE report criteria**				
>>>Intra-frequency measurement				

Information Element	Presence	Multi	IE type and reference	Semantics description
reporting criteria				
>>>Inter-frequency measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>Inter-system				
>>Inter-system cell info		1 to <MaxInterSysCells>		Measurement object
>>Inter-system measurement quantity	C event trigger			
>>Inter-system ~~measurement~~ reporting quantity	O			
>>Maximum number of reporting cells	O			
>>**CHOICE report criteria**				
>>>Inter-system measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>Traffic Volume				
>>Traffic volume measurement Object				
>>Traffic volume measurement quantity	C event trigger			
>>Traffic volume ~~measurement~~ reporting quantity	O			
>>Measurement validity	O			
>>**CHOICE report criteria**				
>>>Traffic volume measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>Quality				
>>Quality measurement Object				
>>Quality measurement quantity	C event trigger			
>>Quality ~~measurement~~ reporting quantity	O			
>>**CHOICE report criteria**				
>>>Quality measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	
>UE internal				
>>UE internal measurement quantity	C event trigger			
>>UE internal ~~measurement~~ reporting quantity	O			
>>**CHOICE report criteria**				
>>>UE internal measurement reporting criteria				
>>>Periodical reporting criteria				
>>>No reporting			NULL	

Condition	Explanation

Setup	This IE is only included if measurement command is Setup
NotRelease	This IE is only included if measurement command is Setup or Modify
Event trigger	This element is only included if the Reporting mode IE is set to event trigger reporting mode.

Multi Bound	Explanation
MaxIntraCells	Maximum number of Intra-frequency cells in a measurement control
MaxInterCells	Maximum number of Inter-frequency cells in a measurement control
MaxInterSysCells	Maximum number of Inter-System cells in a measurement control

CHOICE *Measurement*	**Condition under which the given *Measurement* is chosen**
Intra-frequency	if measurement type=Intra-frequency measurement
Inter-frequency	if measurement type=Inter-frequency measurement
Inter-system	if measurement type=Intrera-system measurement
Traffic volume	if measurement type=traffic volume measurement
Quality	if measurement type=Quality measurement
UE internal	if measurement type=UE internal measurement
CHOICE *reporting criteria*	**Condition under which the given *reporting criteria* is chosen**
******* measurement reporting criteria	Chosen when event triggering is required
Periodical reporting criteria	Chosen when periodical reporting is required
No reporting	Chosen when this measurement only is used as additional measurement to another measurement

Multi Bound	Explanation
MaxAdditionalMeas	Maximum number of additional measurements for a given measurement identity

10.1.13 MEASUREMENT CONTROL FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.14 MEASUREMENT REPORT

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Measurement Information Elements				
Measurement identity number	M			
Measured Results	~~C-MR required~~O			
Additional Measured results		0 to <MaxAdditionalMeas>		
>Measured Results	M			
CHOICE event result	~~C-event trigger~~O			
>Intra-frequency measurement event results				
>Inter-frequency measurement event results				
>Inter-system measurement event results				For IS-2000 results, include fields of the *Pilot Strength Measurement Message* from Section 2.7.2.3.2.5 of TIA/EIA/IS-2000.5
>Traffic volume measurement event results				
>Quality measurement event results				

Condition	Explanation
~~*Event trigger*~~	~~This element is only included in the message that is sent in event trigger reporting mode.~~
~~*MR required*~~	~~This information element is included by the sender only if indicated optionally by Reporting Quantity in Measurement Control~~

Multi Bound	Explanation
MaxAdditionalMeas	Maximum number of additional measurements for a given measurement identity

CHOICE *event result*	Condition under which the given *event result* is chosen
Intra-frequency measurement event results	if measurement type=Intra-frequency measurement
Inter-frequency measurement event results	if measurement type=Inter-frequency measurement
Inter-system measurement event results	if measurement type=Inter-system measurement
Traffic volume measurement event results	if measurement type=traffic volume measurement
Quality measurement event results	if measurement type=Quality measurement

10.1.15 PAGING TYPE 1

This message is used to send information on the paging channel. One or several UEs, in idle or connected mode, can be paged in one message, which also can contain other information.

RLC-SAP: TM

Logical channel: PCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Paging record		0 to <Page Count>		
Other information elements				
BCCH modification info	O			

Multi Bound	Explanation
Page Count	Number of UEs paged in the Paging Type 1 message

10.1.16 PAGING TYPE 2

This message is used to page an UE in connected mode, when using the DCCH for CN originated paging.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Paging cause	M			
CN Information elements				
CN domain identity	M			
Paging Record Type Identifier	M		Enumerated (IMSI (GSM-MAP), TMSI (GSM-MAP)/ P-TMSI, IMSI (DS-41), TMSI (DS-41))	
~~**UE Information elements**~~				
~~Paging cause~~	~~M~~			

10.1.17 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
New U-RNTI	O		U-RNTI	
New C-RNTI	C - RACH/FACH		C-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
Phy CH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			For FACH/PCH
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE mode				
~~>TDD~~				
~~>>PICH info~~				
~~>>Uplink Timing Advance~~	~~O~~			
~~>>PUSCH power control info~~	~~O~~			
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>PICH info				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only included in the sent message when using RACH/FACH
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH
MaxRLcount	Maximum number of radio links to be set up

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.18 PHYSICAL CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a physical channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.19 PHYSICAL CHANNEL RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.20 PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)

This message is used by UTRAN to assign physical resources to USCH/DSCH transport channels in TDD, for temporary usage by the UE.

RLC-SAP: TM or AM

Logical channel: SHCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
C-RNTI	M			
PUSCH allocation pending	O			
TrCH information elements				
TFCS identity	O			
PhyCH information elements				
PUSCH power control info	O			
Uplink timing advance info	O			
PUSCH info	O			
PDSCH info	O			

10.1.21 PUSCH CAPACITY REQUEST (TDD only)

This message is used by the UE for request of PUSCH resources to the UTRAN.

RLC-SAP: TM

Logical channel: SHCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
C-RNTI	M			
Measurement information elements				
Traffic amount information		1 to <RABCount>		Send traffic amount information for each Radio Access Bearer in the message
>RB ID	M			
>RLC buffer payload	M			
>Measured results on RACH	O			

Multi Bound	Explanation
RABCount	Number of traffic amount information in the message

10.1.22 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
~~New C-RNTI~~	~~C - RACH/FACH~~			
New U-RNTI	O		U-RNTI	
New C-RNTI	C - RACH/FACH		C-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to reconfigure		0 to <MaxRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	O			Presence is FFS. For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info	O			
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS

Information Element	Presence	Multi	IE type and reference	Semantics description
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			
>>~~Downlink~~ DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
*MaxSysInfo*Block*FACHCount*	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

CHOICE *RLC info type*	Condition under which the given *RLC info type* is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.23 RADIO BEARER RECONFIGURATION COMPLETE

This message is sent from the UE when a RB and signalling link reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.24 RADIO BEARER RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.25 RADIO BEARER RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
~~New C-RNTI~~	~~C - RACH/FACH~~		~~C-RNTI~~	
New U-RNTI	O		U-RNTI	
New C-RNTI	C - RACH/FACH		C-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to release		1 to <MaxRBcount>		
>RB identity	M			
RB information to be affected		0 to <MaxOtherRBcount>		
>RB identity	M			
>RB mapping info	O			
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink

Information Element	Presence	Multi	IE type and reference	Semantics description
Uplink transport channels				
Deleted TrCH information ~~Transport channel identity~~		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAdd~~FFS~~TrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddFFSTrCH>		
>>Dynamic Control				
>>Transmission time validity				
>>Time duration before retry				
>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		~~Editor: this limit should probably also be MaxReconAddFFSTrCH~~
>Transport channel identity	M			
>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFA		Note 3

Information Element	Presence	Multi	IE type and reference	Semantics description
		CHCount>		
>Scheduling information				Note 3
Choice *mode*				
>FDD				
>>SSDT indicator				
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O, FFS			Note 3
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelRBcount	Maximum number of RBs to be released
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH
MaxReconAddFFSTrCH	Maximum number of transport channels to add and reconfigure

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH Info (for RACH)	
PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.26 RADIO BEARER RELEASE COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.27 RADIO BEARER RELEASE FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.28 RADIO BEARER SETUP

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
~~**CN information elements**~~				
~~NAS binding info~~	~~M~~			
~~CN domain identity~~				
UE Information elements				
Activation time	O			
~~New C-RNTI~~	~~C – RACH/FACH~~		~~C-RNTI~~	
New U-RNTI	O		U-RNTI	
New C-RNTI	C – RACH/FACH		C-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
NAS binding info	M			Used to relate RAB and RB
CN domain identity	M			Used to relate RAB and RB
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
RB information elements				
RB information to setup		1 to <MaxRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to be affected		0 to		

Information Element	Presence	Multi	IE type and reference	Semantics description
		<MaxOtherRBcount>		
>RB identity	M			
>RB mapping info	M			
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information~~Transport channel identity~~		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>~~Downlink~~ DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
IfDPCH	This IE is only sent if "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddcount	Maximum number of Transport CHannels reconfigured or added
MaxRBcount	Maximum number of RBs that could be setup with this message
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxSysInfo*Block*FACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

CHOICE *RLC info type*	Condition under which the given *RLC info type* is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.29 RADIO BEARER SETUP COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.30 RADIO BEARER SETUP FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.31 RNTI REALLOCATION

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
New U-RNTI	O		U-RNTI	
New C-RNTI	O		C-RNTI	
Ciphering mode info	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1,2)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1,2)

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

NOTE 1: It depends on the length of these information whether this message can be used to notify these information to UE.

NOTE 2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

10.1.32 RNTI REALLOCATION COMPLETE

This message is used to confirm the new RNTI information for the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.33 RRC CONNECTION RE-ESTABLISHMENT

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
New U-RNTI	O		U-RNTI	
New C-RNTI	O		C-RNTI	
Activation time	O			
Re-establishment timer	O			
CN information elements				
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O		GSM-MAP NAS system information	(Note1)
>CN domain specific GSM-MAP NAS system info	O			(Note1)
NAS binding info	C-RBsetup			
CN domain identity	C-RBsetup			
RB information elements				
RB information to setup		0 to <MaxSetupRBcount>		
>RB identity	M			
>PDCP info	O			
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
RB information to release		0 to <MaxRetRBcount>		
>RB identity	M			
RB information to reconfigure		0 to <MaxReconRBcount>		
>RB identity	M			
>CHOICE *RLC info type*	O			
>>RLC info				FFS
>>Signalling radio bearer type				
>RB mapping info	O			
>RB suspend/resume	O			Not applicable to the signalling bearer.
~~Transport Channel~~TrCH				

Information Element	Presence	Multi	IE type and reference	Semantics description
Information Elements				
TFCS	O			For uplink TFCS
TFCS	O			For downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
Uplink transport channels				
Deleted TrCH information		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>Transport channel identity	M			
>TFS	M			
CHOICE mode				
>FDD				
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconAddTrCH>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Deleted TrCH information~~Transport channel identity~~		0 to <MaxDelTrCH>		
>Transport channel identity	M			
Added or Reconfigured TrCH information		0 to <MaxReconAddTrCH>		
>>Transport channel identity	M			
>>TFS	M			
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRlcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		
>>Scheduling information				
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET info	O			UL/DL radio resource for CPCH control (Note3)
>>Default DPCH Offset Value	O			
>>~~Downlink~~ DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 3: How to map UL and DL radio resource in the message is FFS.

Condition	Explanation
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
RBsetup	This information element is only sent when RB information to setup exists
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive
~~Signalling radio bearer type~~	

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains
MaxSetupRBcount	Maximum number of RBs to be setup
MaxRelRBcount	Maximum number of RBs to be released
MaxReconRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxRLcount	Maximum number of radio links
MaxSysInfoBlockFACHCount	Maximum number of reference to system information blocks on the FACH

10.1.34 RRC CONNECTION RE-ESTABLISHMENT COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.35 RRC CONNECTION RE-ESTABLISHMENT REQUEST

NOTE: Functional description of this message to be included here

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
U-RNTI	M			
Measurement information elements				
Measured results on RACH	M			

10.1.36 RRC CONNECTION REJECT

The network transmits this message when the requested RRC connection cannot be accepted.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Initial UE identity	M			
Rejection cause	M			
Wait time	O			

10.1.37 RRC CONNECTION RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Release cause	M			
Number of RRC Message Transmissions	M			

10.1.38 RRC CONNECTION RELEASE COMPLETE

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.39 RRC CONNECTION REQUEST

RRC Connection Request is the first message transmitted by the UE when setting up an RRC Connection to the network.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Initial UE identity	M			
Establishment cause	M			
Initial UE capability	M			
Measurement information elements				
Measured results on RACH	M			

10.1.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Initial UE identity	M			
New U-RNTI	M		U-RNTI	
New C-RNTI	O		C-RNTI	Only if assigned to a common transport channel
Activation time	O			
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Capability update requirement	M			
RB information elements				
Signalling radio bearers		3 to 4		Information for signalling radio bearers, in the order RB 0 up to 3.
>CHOICE *RLC info type*	M			For the first release this choice has only one possible value. This choice type may be extended in future releases.
>>RLC info				
>RB mapping info	M			
TrCH information elements				
TFCS	O			For Uplink TFCS
TFCS	O			For Downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>>TFCS Identity	O			Downlink TFCS
TFC subset	O			For TFC subset in uplink
CPCH set ID	O			
Uplink transport channels				
Uplink transport channel information		1 to <MaxULTrCHCount>		
>Transport channel identity	M			
>TFS	M			
Downlink transport channels				
Downlink transport channel information		1 to <MaxDLTrCHCount>		
>Transport channel identity	M			
>TFS	M			
>Transparent mode signalling info	C if TM_DCH	0 or 1		

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note 1)
>>Gated Transmission Control info	O, FFS			Note 2
>>Default DPCH Offset Value	O			
>>~~Downlink~~ DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
IfTM_DCH	This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands.
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxULTrCHCoun	Maximum number of new uplink transport channels
MaxDLTrCHCount	Maximum number of new downlink transport channels
MaxRLcoun	Maximum number of radio links to be set up

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive.

NOTE 1: How to map UL and DL radio resource in the message is FFS.

NOTE 2: The activation time should be present when the Gated Transmission control info is present in this message.

10.1.41 RRC CONNECTION SETUP COMPLETE

This message confirms the establishment of the RRC Connection by the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection hyper frame number	M			
Ciphering hyperframe number	M			
UE radio capability	O			
UE system specific capability	O		Inter-system message	

10.1.42 RRC STATUS

This message is sent to indicate a protocol error.

RLC-SAP: AM

Logical channel: DCCH

Direction: both

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.43 SCCH INFORMATION

RLC-SAP: TM

Logical channel: SCCH

Direction: UTRAN -> UE

Information Element	Presence	Multi	IE type and reference	Semantics description
SCCH info	M		Bit String(3)	Reserved

10.1.44 SECURITY MODE COMMAND

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN to UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Ciphering capability	M			
Ciphering mode info	O			Only present if ciphering shall be controlled
CN Information elements				
CN domain identity	M			Indicates which cipher and integrity protection keys are is applicable
~~**UE information elements**~~				
~~Ciphering capability~~	~~M~~			
~~Ciphering mode info~~	~~O~~			~~Only present if ciphering shall be controlled~~

Multi Bound	Explanation
MaxReconRBs	For each radio bearer that is reconfigured

10.1.45 SECURITY MODE COMPLETE

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
RB Information elements				
Radio bearer uplink ciphering activation time info	O		Radio bearer activation time info	

Multi Bound	Explanation
MaxReconRBs	For each radio bearer that is reconfigured

10.1.46 SIGNALLING CONNECTION RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CN information elements				
Signalling Flow related information		1 to <maxFlowID>		Flow identifier to be provided for each signalling flow to be released.
>Flow Identifier	M			

Multi Bound	Explanation
MaxFlowId	Maximum number of flow identifiers

10.1.47 SYSTEM INFORMATION

Information Element	Presence	Multi	IE type and reference	Semantics description
Message type	O			The message type is mandatory on the FACH, and absent on the BCH
CHOICE *mode*				
>FDD				
>>SFNprime	O		Enumerated (0,2..4094)	The IE is mandatory on the BCH, and absent on the FACH SFN=SFNprime (for first 10ms frame of 20ms TTI), SFN=SFNprime+1 (for last 10ms frame of 20ms TTI)
CHOICE Segment combination	M			
>Combination 1				
>>First Segment			First Segment	
>Combination 2				
>>Subsequent Segment			Subsequent Segment	
>Combination 3				
>>Last segment				
>Combination 4				
>>Last Segment			Last Segment	
>>Complete		1..indefinite	Complete	
>Combination 5				
>>Complete		1..indefinite	Complete	
SI Padding	C filling			

Condition	Explanation
filling	The padding is constrained to be such that the message fills the transport block.

10.1.47.1 First Segment

This segment type is used to transfer the first segment of a segmented system information block.

Information Element	Presence	Multi	IE type and reference	Semantics description
Other information elements				
SIB type	M			
SEG_COUNT	M			
SIB data	M			

10.1.47.2 Subsequent Segment

This segment type is used to transfer a subsequent segment of a segmented system information block.

Information Element	Presence	Multi	IE type and reference	Semantics description
Other information elements				
SIB type	M			
Segment index	M			
SIB data	M			

10.1.47.3 Last Segment

This segment type is used to transfer the last segment of a segmented system information block.

Information Element	Presence	Multi	IE type and reference	Semantics description
Other information elements				
SIB type	M			
Segment index	M			
SIB data	M			

10.1.47.4 Complete SIB

This segment type is used to transfer a non-segmented system information block.

Information Element	Presence	Multi	IE type and reference	Semantics description
Other information elements				
SIB type	M			
SIB content	M			

10.1.47.5 System Information Blocks

10.1.47.5.1 SIB Content

SIB Segments are the result of the segmentation of a 'SIB Content' IE. The SIB content IE is developed hereafter:

Information Element	Presence	Multi	IE type and reference	Semantics description
CHOICE SIB type	M			
>Master information block				
>System information block type 1				
>System information block type 2				
>System information block type 3				
>System information block type 4				
>System information block type 5				
>System information block type 6				
>System information block type 7				
>System information block type 8				
>System information block type 9				
>System information block type 10				
>System information block type 11				
>System information block type 12				
>System information block type 13				
>System information block type 13.1				
>System information block type 13.2				
>System information block type 13.3				
>System information block type 13.4				
>System information block type 14				

Condition	Explanation
SIB Type	The common value of the 'SIB type' field in the segment(s).

10.1.47.5.2 Master Information Block

Information Element	Presence	Multi	IE type and reference	Semantics description
Other information elements				
MIB Value tag	M			
CHOICE mode				
>TDD				
>>SFNprime	M		Integer (0,2..4094)	SFN=SFNprime (for first 10ms frame of 20ms TTI), SFN=SFNprime+1 (for last 10ms frame of 20ms TTI)
Network capability extension indication				A value of "False" indicates that the Initial UE capability is interpreted according to "Release 99 (first release)". If the value is set to "True", a new definition given in a future release is added to this information element.
Capability Extension Info	C-Ind			Note 1
References to other system information blocks		1 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
CN information elements				
CN Type	M		Enumerated (GSM-MAP, ANSI-41, GSM-MAP AND ANSI-41)	
PLMN Identity	C-GSM			
ANSI-41 Information elements	C-ANSI			
>P_REV	M			
>MIN_P_REV	M			
>SID	M			
>NID	M			

NOTE 1: This information element may be defined in later releases.

Condition	Explanation
GSM	This information element shall be present in case (CN Type == "GSM-MAP") or (CN Type == "GSM-MAP AND ANSI-41")
ANSI	This information element shall be present in case (CN Type == "ANSI-41") or (CN Type == "GSM-MAP AND ANSI-41")

Multi Bound	Explanation
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.3 System Information Block type 1

The system information block type 1 contains NAS system information as well as UE timers and counters to be used in idle mode.

Information Element	Presence	Multi	IE type and reference	Semantics description
CN information elements				
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		1 to <maxCNdomains>		Send CN information for each CN domain.
>CN domain identity	M			
>CN domain specific GSM-MAP NAS system information	M		GSM-MAP NAS system information	
>CN domain specific DRX cycle length coefficient	M		DRX cycle length coefficient	
UE information				
UE Timers and counters in idle mode	M			

Multi Bound	Explanation
MaxCNdomains	Maximum number of CN domains

10.1.47.5.4 System Information Block type 2

The system information block type 2 contains the URA identity and information for periodic cell and URA update. It also includes the UE timers and counters to be used in connected mode.

Information Element	Presence	Multi	IE type and reference	Semantics description
UTRAN mobility information elements				
URA identity		1 ..<maxURAcount>		
Information for periodic cell and URA update	M			
UE information				
UE Timers and counters in connected mode	M			
UTRAN DRX cycle length	M			
CHOICE *mode*				
>FDD				
>>TX Diversity Timing Mode	O		Enumerated(Normal Cell Mode,Macro Cell Mode)	*Note: The presence of this IE is mandatory if closed loop TX Diversity is used.*

Multi Bound	Explanation
MaxURAcount	Maximum number of URAs in a cell

10.1.47.5.5 System Information Block type 3

The system information block type 3 contains parameters for cell selection and re-selection. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
UTRAN mobility information elements				
Cell identity	M			The necessity and usage of cell identity is FFS.
Cell selection and re-selection info	M			
Cell Access Restriction	M			

Multi Bound	Explanation
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.6 System Information Block type 4

The system information block type 4 contains parameters for cell selection and re-selection to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
UTRAN mobility information elements				
Cell identity	M			The necessity and usage of cell identity is FFS.
Cell selection and re-selection info	M			
Cell Access Restriction	M			

Multi Bound	Explanation
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.7 System Information Block type 5

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
PhyCH information elements				
Frequency info	O			
Maximum allowed UL TX power	O			
CHOICE *mode*				
>TDD				
>>Midamble configuration	O			The maximum number of midamble shifts for burst type 1: 4, 8 or 16. Default value is 8. The maximum number of midamble shifts for burst type 2: 3 or 6. Default value is 3.
>FDD				
>>Secondary CPICH info	O			Note 2
Primary CCPCH info	O			Note 1
PRACH information		1 .. <maxPRACHcount>		
>PRACH info	M			
>TFS	M			
>CHOICE *mode*				
>>FDD				
>>>PRACH partitioning	M			
>>>Primary CPICH DL TX power	M			
>>>Constant value	M			
>>>PRACH power offset	M			
>>>AICH info	M			
>>TDD				
>>>ASC info	O			
Secondary CCPCH information		1 .. <maxSCCPCHcount>		
>Secondary CCPCH info	M			
>TFCS	M			For FACHs and PCH
>FACH/PCH information		1 .. <maxFACHcount>		
>>TFS				For each FACHs and PCH Note 3
>>CTCH indicator	M	Boolean		The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	C-Pich			
CBS DRX Level 1 information	C-CTCH			

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH(FDD only).

NOTE 2: This parameter is needed in case of using adaptive array antenna.

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

Condition	Explanation
CTCH	Present only when the IE "CTCH indicator" is equal to TRUE for at least one FACH.
Pich	PICH info is present only when PCH is multiplexed on Secondary CCPCH

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs
MaxSCCPCHcount	Maximum number of secondary CCPCHs
MaxFACHcount	Maximum number of FACHs mapped onto secondary CCPCHs
MaxPCHcount	Maximum number of PCHs mapped onto secondary CCPCHs
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.8 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common physical channels to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
PhyCH information elements				
Frequency info	O			
Maximum allowed UL TX power	O			
Primary CCPCH info	O			Note 1
CHOICE *mode*				
>FDD				
>>PICH Power offset	M			
>>AICH Power offset	M			
>>Secondary CPICH info	O			Note 2
PRACH information		0 .. <maxPRACHcount>		
>PRACH info	M			
>TFS	M			
>CHOICE *mode*				
>>FDD				
>>>PRACH partitioning	M			
>>>Primary CPICH DL TX power	M			
>>>Constant value	M			
>>>PRACH power offset	M			
>>>AICH info	M			
Secondary CCPCH information		0 .. <maxSCCPCHcount>		
>Secondary CCPCH info	M			
>TFCS	M			For FACHs and PCH
>FACH/PCH information		1 .. <maxFACHcount>		
>>TFS				For each FACHs and PCH Note 3
>>CTCH indicator	M	Boolean		The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.
>PICH info	C-Pich			
CBS DRX Level 1 information	C-CTCH			

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

NOTE 2: This parameter is needed in case of using adaptive array antenna.

NOTE 3: TFS for PCH shall be listed at the top of FACH/PCH information if PCH exists.(FACHcount=1)

Condition	Explanation
CTCH	Present only when the IE "CTCH indicator" is equal to TRUE for at least one FACH.
Pich	PICH info is present only when PCH is multiplexed on Secondary CCPCH

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs
MaxSCCPCHcount	Maximum number of secondary CCPCHs
MaxFACHcount	Maximum number of FACHs mapped onto secondary CCPCHs
MaxPCHcount	Maximum number of PCHs mapped onto secondary CCPCHs
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.

10.1.47.5.9 System Information Block type 7

The system information block type 7 contains the fast changing parameters UL interference and Dynamic persistence level

Information Element	Presence	Multi	IE type and reference	Semantics description
UL interference	M			
PhyCH information elements				
PRACHs listed in system information block type 5		1 .. <maxPRACHcount>		The order of the PRACHs is the same as in system information block type 5.
>Dynamic persistence level	M			
PRACHs listed in system information block type 6		0 .. <maxPRACHcount>		The order of the PRACHs is the same as in system information block type 6.
>Dynamic persistence level	M			

Multi Bound	Explanation
MaxPRACHcount	Maximum number of PRACHs

10.1.47.5.10 System Information Block type 8 (FDD)

The system information block type 8 contains static CPCH information to be used in the cell.

Information Element	Presence	Multi	IE type and reference	Semantics description
UE information				
CPCH parameters	M			
PhyCH information elements				
CPCH SET info		1 .. <maxCPCHsetcount>		

Multi Bound	Explanation
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.1.47.5.11 System Information Block type 9 (FDD)

The system information block type 9 contains CPCH information to be used in the cell.

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
CPCH set persistency value	M	1 .. <maxCPCHsetcount>		

Multi Bound	Explanation
MaxCPCHsetcount	Maximum number of CPCH sets per Node B

10.1.47.5.12 System Information Block type 10 (FDD)

The system information block type 10 contains information to be used by UEs having their DCH controlled by a DRAC procedure.

Information Element	Presence	Multi	IE type and reference	Semantics description
UE information				
DRAC information		1 .. <maxDRACclasses>		DRAC information is sent for each class of terminal
>Transmission probability	M			
>Maximum bit rate	M			

Multi Bound	Explanation
MaxDRACclasses	Maximum number of UE classes which would require different DRAC parameters

10.1.47.5.13 System Information Block type 11

The system information block type 11 contains measurement control information to be used in the cell. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
Measurement information elements				
Measurement control information		1 .. <maxMeasurementTypecount>		
>Measurement type	M			
>CHOICE Measurement				
>>Intra-frequency	~~C – Intrafreq~~			
>>>Intra-frequency cell info		1 .. <MaxIntraCells>		
>>>Intra-frequency Measurement quantity	M			
>>>Intra-frequency reporting Quantity for RACH Reporting	M			
>>>Maximum number of Reported cells on RACH	M			
>>Inter-frequency	~~C – Interfreq~~			
>>>Inter-frequency cell info		1 .. <MaxInterCells>		
>>>Inter-frequency Measurement quantity	M			
>>Inter-system	~~C – Intersys~~			
>>>Inter-system cell info	M	1 .. <MaxInterSysCells>		
>>>Inter-system measurement Quantity	M			
>>Traffic volume				
>>>Traffic volume measurement objects	M~~O~~			
>>>Traffic volume measurement quantity	M~~O~~			
>>UE Internal				
>>>UE internal measurement quantity	M~~O~~			

Condition	Explanation
~~*Measurement*~~	~~The choice shall be consistent (same name) with the value of the 'Measurement type' IE~~
~~*Intersys*~~	~~Measurement type = Inter system measurement~~
~~*Interfreq*~~	~~Measurement type = Inter frequency measurement~~
~~*Intrafreq*~~	~~Measurement type = Intra frequency measurement~~
~~*Blocktype*~~	~~The presence of this IE depends on the definition of the system information block type.~~

Multi Bound	Explanation
MaxMeasTypeCount	Maximum number of measurement types
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.
MaxIntraCells	Maximum number of intra-frequency cells in a measurement control.
MaxInterCells	Maximum number of inter-frequency cells in a measurement control
MaxInterSysCells	Maximum number of inter-system cells in a measurement control.

CHOICE *Measurement*	**Condition under which the given *Measurement* is chosen**
Intra-frequency	if measurement type=Intra-frequency measurement
Inter-frequency	if measurement type=Inter-frequency measurement
Inter-system	if measurement type=Inter-system measurement
Traffic volume	if measurement type=traffic volume measurement
Quality	if measurement type=Quality measurement
UE internal	if measurement type=UE internal measurement

10.1.47.5.14 System Information Block type 12

The system information block type 12 contains measurement control information to be used in connected mode.

Information Element	Presence	Multi	IE type and reference	Semantics description
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
Measurement information elements				
Measurement control information		1 .. <maxMeasurementTypecount>		
>Measurement Identity Number	M			
>Measurement Type	M			
>CHOICE Measurement				
>>Intra-frequency	~~C – Intrafreq~~			
>>>Intra-frequency cell info		0 .. <MaxIntra Cells>		
>>>Intra-frequency Measurement quantity	O			
>>>Intra-frequency Reporting quantity for RACH reporting	O			
>>>Maximum number of Reported cells on RACH	O			
>>>Intra-frequency reporting Quantity	O			
>>Inter-frequency	~~C – Interfreq~~			
>>>Inter-frequency cell Info		0 .. <MaxInter Cells>		
>>>Inter-frequency Measurement quantity	O			
>>Inter-system	~~C – Intersys~~			
>>>Inter-system cell info		0 .. <MaxInter SysCells>		
>>>Inter-system measurement quantity	O			
>>Traffic volume				
>>>Traffic volume measurement objects	O~~M~~			
>>>Traffic volume measurement quantity	O~~M~~			
>>UE Internal				
>>>UE internal measurement quantity	O~~M~~			

Condition	Explanation
~~*Measurement*~~	~~The choice shall be consistent (same name) with the value of the 'Measurement type' IE~~
~~*Intersys*~~	~~Measurement type = Inter system measurement~~
~~*Interfreq*~~	~~Measurement type = Inter frequency measurement~~
~~*Intrafreq*~~	~~Measurement type = Intra frequency measurement~~

Multi Bound	Explanation
MaxMeasTypeCount	Maximum number of measurement types
MaxSysInfoBlockcount	Maximum number of references to other system information blocks.
MaxIntraCells	Maximum number of intra-frequency cells in a measurement control.
MaxInterCells	Maximum number of inter-frequency cells in a measurement control
MaxInterSysCells	Maximum number of inter-system cells in a measurement control.

Option	Default value
All optional elements	If not present, the value shall be assumed to be that indicated for in idle mode in SIB 11.

CHOICE *Measurement*	**Condition under which the given *Measurement* is chosen**
Intra-frequency	if measurement type=Intra-frequency measurement
Inter-frequency	if measurement type=Inter-frequency measurement
Inter-system	if measurement type=Inter-system measurement
Traffic volume	if measurement type=traffic volume measurement
Quality	if measurement type=Quality measurement
UE internal	if measurement type=UE internal measurement

10.1.47.5.15 System Information Block type 13

The system information block type 13 contains ANSI-41 system information.

Information Element	Presence	Multi	IE type and reference	Semantics description
Other information elements				
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
CN Information Elements				
CN information		1 to <maxCNdomains>		Send CN information for each CN domain.
>CN domain identity	M			
>NAS (ANSI-41) system information	M			
>CN DRX cycle length	M			
UE Information				
UE timers and counters in idle mode	O			
Capability update requirement	O			

10.1.47.5.15.1 System Information Block type 13.1

The system information block type 13.1 contains the ANSI-41 RAND information.

Information Element	Presence	Multi	IE type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 RAND information	M			

10.1.47.5.15.2 System Information Block type 13.2

The system information block type 13.2 contains the ANSI-41 User Zone Identification information.

Information Element	Presence	Multi	IE type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 User Zone Identification information	M			

10.1.47.5.15.3 System Information Block type 13.3

The system information block type 13.3 contains the ANSI-41 Private Neighbor List information.

Information Element	Presence	Multi	IE type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 Private Neighbor List information	M			

10.1.47.5.15.4 System Information Block type 13.4

The system information block type 13.4 contains the ANSI-41 Global Service Redirection information.

Information Element	Presence	Multi	IE type and reference	Semantics description
ANSI-41 information elements				
ANSI-41 Global Service Redirection information	M			

10.1.47.5.16 System Information Block type 14 (TDD)

The system information block type 14 contains parameters for common and dedicated physical channel uplink outer loop power control information to be used in both idle and connected mode. The block may also contain scheduling information for other system information blocks.

Information Element	Presence	Multi	IE type and reference	Semantics description
Other information elements				
References to other system information blocks		0 .. <maxSysInfoBlockcount>		
>Scheduling information	M			
PhyCH information elements				
Primary CCPCH Tx Power	O			For path loss calculation
Individual Timeslot Info		1 to ….<maxTScount>		
>Timeslot	M			
>UL Interference	M			UL Timeslot Interference
RACH Constant Value	O			Operator controlled RACH

				Margin
DPCH Constant Value	O			Operator controlled UL DPCH Margin
USCH Constant Value	O			Operator controlled USCH Margin

Multi Bound	Explanation
maxTScount	Maximum number of timeslots

10.1.48 SYSTEM INFORMATION CHANGE INDICATION

This message is used to send information on FACH to the UEs in state CELL_FACH about coming modification of the system information.

RLC-SAP: TM

Logical channel: BCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
Other information elements				
BCCH modification info	M			

10.1.49 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE Information elements				
Integrity check info	O			
Integrity protection mode info	O			
Activation time	O			
~~New C-RNTI~~	~~C - RACH/FACH~~		~~C-RNTI~~	
New U-RNTI	O		U-RNTI	
New C-RNTI	C - RACH/FACH		C-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Re-establishment timer	O			
Ciphering mode info	O			
CN information elements	O			
PLMN identity	O			(Note1)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1)
TrCH Information Elements				
TFCS	O			for uplink TFCS
TFCS	O			for downlink TFCS
TFCS	O			For SCCPCH TFCS
CHOICE *mode*				
>TDD				
>>TFCS Identity	O			Uplink TFCS
>>TFCS Identity	O			Downlink TFCS
TFC subset	O			for TFC subset in uplink
Uplink transport channels				
Reconfigured TrCH information		0 to <MaxReconTrCH>		
>Transport channel identity				
>TFS				
CHOICE mode				
>FDD				

Information Element	Presence	Multi	IE type and reference	Semantics description
>>CPCH set ID	O			
>>DRAC information	C DRAC	1 to <MaxReconTrCHDRAC>		
>>>Dynamic Control				
>>>Transmission time validity				
>>>Time duration before retry				
>>>Silent period duration before release				
Downlink transport channels				
Reconfigured TrCH information		0 to <MaxReconTrCH>		
>Transport channel identity				
>TFS				
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink information per radio link		0 to <MaxRLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
>>>TPC combination index	C-ifDPCH			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>~~Downlink~~ DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			

Information Element	Presence	Multi	IE type and reference	Semantics description
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
IfDPCH	This IE is only sent if IE "Downlink DPCH info" is present

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links to be set up
MaxReconcount	Maximum number of Transport Channels reconfigured
MaxReconTrCHDRAC	Maximum number of Transport CHannels which are controlled by DRAC and which are reconfigured
MaxSysInfoBlockFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3 The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.50 TRANSPORT CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a transport channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

NOTE: The usage of this message for indicating the cell the UE will select in the DCH->RACH/FACH case, is FFS.

10.1.51 TRANSPORT CHANNEL RECONFIGURATION FAILURE

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.52 TRANSPORT FORMAT COMBINATION CONTROL

NOTE: Functional description of this message to be included here

RLC-SAP: TM, AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	C-notTM			
UE information elements				
Integrity check info	O			
TrCH information elements				
Choice ch				
>TFC subset	O			For DPCH TFCS in uplink
>TFC Control duration	C-notTMopt			

Condition	Explanation
NotTM	The message type is not included when transmitting the message on the transparent mode signalling DCCH
NotTMopt	The information element is not included when transmitting the message on the transparent mode signalling DCCH and is optional otherwise.

CHOICE *ch*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

10.1.53 TRANSPORT FORMAT COMBINATION CONTROL FAILURE

This message is sent to indicate that a received TRANSPORT FORMAT COMBINATION CONTROL message could not be handled by the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Failure cause	M			

10.1.54 UE CAPABILITY ENQUIRY

The UE CAPABILITY ENQUIRY is used by the UTRAN to enquire inter-system classmarks from the UE.

RLC-SAP: t.b.d.

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Capability update requirement	M			

10.1.55 UE CAPABILITY INFORMATION

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE → UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
UE radio capability	O			
Other information elements				
UE system specific capability	O		Inter-system message	Includes inter-system classmark

10.1.56 UE CAPABILITY INFORMATION CONFIRM

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			

10.1.57 UPLINK DIRECT TRANSFER

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UE ->UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
CN information elements				
Flow Identifier	M			Allocated by UE for a particular session
NAS message	M			
Measurement information elements				
Measured results on RACH	O			

10.1.58 URA UPDATE

This message is used by the UE to initiate a URA update procedure.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
U-RNTI	M			
URA update cause	M			

10.1.59 URA UPDATE CONFIRM

This message confirms the URA update procedure and can be used to reallocate new RNTI information for the UE valid after the URA update.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Message Type	M			
UE information elements				
Integrity check info	O			
Integrity protection mode info	O			
U-RNTI	C-CCCH			
New U-RNTI	O		U-RNTI	
New C-RNTI	O		C-RNTI	
UTRAN DRX cycle length coefficient	O		DRX cycle length coefficient	
DRX Indicator	O			
Ciphering mode info	O			
UTRAN mobility information elements				
URA identifier	O			
CN information elements				
PLMN identity	O			(Note1,2)
CN common GSM-MAP NAS system information	O		GSM-MAP NAS system information	
CN domain related information		0 to <MaxNoCNdomains>		CN related information to be provided for each CN domain
>CN domain identity	O			(Note1,2)
>CN domain specific GSM-MAP NAS system info	O		GSM-MAP NAS system information	(Note1,2)

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains

Condition	Explanation
CCCH	This IE is only sent when CCCH is used

NOTE 1: It depends on the length of these information whether this message can be used to notify these information to UE.

NOTE 2: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

10.2 Information element functional definitions

10.2.1 CN Information elements

10.2.1.1 CN domain identity

Identifies the type of core network domain.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CN domain identity	M		Enumerated (CS domain, PS domain, Don't care)	

10.2.1.2 CN Type

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CN Type	M		Enumerated (GSM-MAP, ANSI-41)	Identifies the type of core network. This IE shall be used to control the interpretation of network dependent messages and information elements in the RRC protocol.

10.2.1.3 Flow Identifier

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Flow Identifier	M		Enumerated (0…15)	Allocated by UE for a particular session

10.2.1.4 IMEI

This IE contains an International Mobile Equipment Identity.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
IMEI	M			Setting specified in [TS 23.003]
>IMEI digit		15	INTEGER(0. .9)	

10.2.1.5 IMSI (GSM-MAP)

This IE contains an International Mobile Subscriber Identity, used towards a GSM-MAP type of core network.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
IMSI (GSM-MAP)	M			Setting specified in [TS 23.003]
>IMSI digit		6 to 15	INTEGER(0. .9)	

10.2.1.6 Location Area Identification

Identifies uniquely a location area for a GSM-MAP type of core network.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Location Area Identification	M			Setting specified in [TS 23.003]
>PLMN identity	M		PLMN identity	
>LAC	M		Bit string(16)	

10.2.1.7 NAS binding info

A field with non-access stratum information to bind a RB to the non-access stratum. This information is transparent to RRC.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
NAS binding info	M		Bit string (16)	

10.2.1.8 NAS message

A non-access stratum message to be transferred transparently through UTRAN.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
NAS message	M		Bit string (0..maxNAS messagelength)	

10.2.1.9 NAS system information (GSM-MAP)

This information element contains system information that belongs to the non-access stratum for a GSM-MAP type of core network. This information is transparent to RRC. It may contain either information specific to one CN domain (CS or PS) or information common for both CN domains.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
GSM-MAP NAS system information	M		Bit string(0..maxNASsystemiInfoLength)	

10.2.1.10 P-TMSI (GSM-MAP)

This IE contains an Packet Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of core network.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
P-TMSI	M		Bitstring (32)	Setting specified in [TS 23.003]

10.2.1.11 PLMN identity

This information element identifies a Public Land Mobile Network for a GSM-MAP

type of core network.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
PLMN identity				Setting of digits is defined in [TS 24.003]
>MCC, Mobile Country Code	M			
>>MCC digit		3	INTEGER(0. .9)	
>MNC, Mobile Network Code	M			
>>MNC digit		3	INTEGER(0. .9)	

10.2.1.12 Routing Area Code

Identifies a routing area within a location area for a GSM-MAP type of core network.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Routing Area Code	M		Bit string(8)	Setting specified in [TS 23.003]

10.2.1.13 Routing Area Identification

Identifies uniquely a routing area for a GSM-MAP type of core network.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Routing Area Identification	M			Setting specified in [TS 23.003]
>LAI	M		Location Area Identification	
>RAC	M		Routing Area Code	

10.2.1.14 Service Descriptor

The value of RR in the reference mentioned below is reserved for paging response.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Service Descriptor	M		Refer to TS24.007 v3.1.0, section 11.2.3.1.1	

10.2.1.15 TMSI (GSM-MAP)

This IE contains an Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of core network.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TMSI (GSM-MAP)	M		Bitstring (32)	Setting specified in [TS 23.003]

10.2.2 UTRAN mobility Information elements

10.2.2.1 Cell Access Restriction

Indicates the restrictions to cell access.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell Barred	M		Boolean	
Cell Reserved for operator use	M		Boolean	
Cell Reserved for SoLSA exclusive use	M		Boolean	

10.2.2.2 Cell identity

This information element identifies a cell unambiguously within a PLMN.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell identity	M		Integer (0..268 435 455)	

10.2.2.3 Cell selection and re-selection info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Radio link timeout				
Cell_selection_and_reselection_quality_measure	M		Enumerated (Ec/N0, SIR)	Choice of measurement (CPICH Rx Ec/N0 or CPICH Rx SIR) to use as quality measure Q. Note 1.
$Qhyst_s$	M		Enumerated (0, 0.5, ..7.5)	[dB]
$Treselection_s$	M		Integer (0-31)	[s]
$Qsearch_s$	M		Integer (-20..0)	Ec/N0, [dB]
Cell Selection and Reselection parameters	O			Used in Alternative 2 in TS 25.304
>Decoding range	O			Decoding is done only when the cell measurement exceeds the neighbour cell decoding range.
$>Qoffset_s$	O			Offset for UEs decoding this cell for cell reselection measurement
>OffsetExp	C – if Qoffset			Expiration timer for UEs decoding the $Qoffset_s$

NOTE 1: The work in order to support the CPICH Rx SIR measurement is in progress in RAN WG4 and may impact the use of that measurement in this document

10.2.2.4 Information for periodic cell and URA update

This information element indicates information to support mechanisms for periodical cell/URA update procedures. It is mapped on System Information message.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
~~T_periodical_cell_update~~T305	M		~~Enumerated (No updating, 1..1023)~~	Designate the time period between periodical cell updating in minutes, or if no periodical updating should be done.
~~T_periodical_ura_update~~T306	M		~~Enumerated (No updating, 1..1023)~~	Designate the time period between periodical URA updating in minutes, or if no periodical updating should be done.

10.2.2.5 URA identity

Gives the identity of the UTRAN Registration Area. It can be used to indicate to the UE which URA it shall use in case of overlapping URAs.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
URA identity			Enumerated (0..65 535)	

10.2.3 UE Information elements

10.2.3.1 Activation time

Activation Time defines the CFN (Connection Frame Number) in which the operation/changes caused by the related message should be executed.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Activation time			Integer(0..255)	CFN [TS 25.402]

10.2.3.2 AM_RLC error indication

Indicates AM_RLC unrecoverable error occurred on c-plane in the UE.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
AM_RLC error indication	M		NULL	

10.2.3.3 Capability Update Requirement

This IE indicates to the UE which specific capabilities to transfer to the network.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UE radio capability update requirement	M		Boolean	
System specific capability update requirement		0 to <MaxSystemCount>	Enumerated (GSM,..)	

10.2.3.4 Cell update cause

Indicates the cause for s cell update.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell update cause			Enumerated (cell reselection, periodic cell update, UL data transmission, paging response, RB control response)	

10.2.3.5 Ciphering capability

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Ciphering Algorithm capability	M		Enumerated	

NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.

10.2.3.6 Ciphering hyper frame number

This hyper frame number (HFN) is used to initialise the ciphering algorithm.
For ciphering, HFN is the most significant bits of COUNT. When the COUNT is initialised: COUNT = HFN (the LSB part of COUNT is set to zero).

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Ciphering HFN	M		Integer (0...2^20-1)	Start value for uplink and downlink COUNT. For RBs using RLC transparent mode or RLC unacknowledged mode, zeros shall be added to form a HFN of 25 bits

10.2.3.7 Ciphering mode info

This information element contains the ciphering specific security mode control information.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Ciphering mode command	M		Enumerated (start/restart, modify, stop)	
Ciphering algorithm	C-*notStop*		UEA [TS 33.102]	
Ciphering activation time information	C-*start/restart*			
>Activation time for DPCH	O		Activation time	Used for radio bearers mapped on RLC-TM
>Radio bearer downlink ciphering activation time info	O		Radio bearer activation time info	Used for radio bearers mapped on RLC-AM or RLC-UM

~~10.2.3.8 Code resource capability~~

~~Information Element/Group name~~	~~Presence~~	~~Range~~	~~IE type and reference~~	~~Semantics description~~
~~DL multi-code capability~~				
~~UL multi-code capability~~				
~~DL Spreading factor capability~~				
~~UL Spreading factor capability~~				

~~NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.~~

10.2.3.9 CPCH Parameters (FDD)

These parameters are used by any UE using any CPCH set allocated to the Node B that is broadcasting this system information.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
NS_IP	M			Number of slots for initial delay for given priority level
Priority level	M			
Backoff control parameters				
>N_ap_retrans_max	M			Max number of AP transmissions without AP-AICH response (access cycle), a PHY parameter.
>N_access_fails	M			Max number of access cycles without AP-AICH response for link failure, a MAC parameter.
>NS_bo_no aich	M			Max number of slots for UE backoff after N ap_retrans_max unsuccessful AP access attempts, a MAC parameter.
>NF_bo_busy	M			Max number of frames for UE backoff after access attempt to busy CPCH, a MAC parameter.
>NF_bo_all_busy	M			Max number of frames for UE backoff after access attempt to last busy CPCH, a MAC parameter.
>NF_bo_collision	M			Max number of frames for UE backoff after collision on CPCH, a MAC parameter.
>T_CPCH	M			CPCH channel timing -Number of slots used to determine Tau values for CPCH channel timing

NOTE: The WG1 and WG2 discussion should be concluded before the contents of these IEs can be finalised. All of the IEs may be considered optional (O) if the UE is programmed with default values for each IE.

10.2.3.10 C-RNTI

The cell RNTI (C-RNTI) identifies an UE having a RRC connection within a cell.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
C-RNTI			Integer(0..65535)	

10.2.3.11 DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in 25.304) .

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DRX cycle length coefficient	M		Integer(2...12)	Refers to 'k' in the formula as specified in 25.304, Discontinuous reception

10.2.3.12 DRX Indicator

Indicates to a UE if DRX shall be used with Cell updating or URA updating or if no DRX at all shall be used.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DRX indicator	M		Enumerated(no DRX, DRX with cell updating, DRX with URA updating)	

Condition	Explanation
NotStop	The IE is present only when the IE "Ciphering mode command" has the values "start/restart" or "modify".
Start/restart	The IE is present only when the IE "Ciphering mode command" has the value "start/restart".

10.2.3.13 Establishment cause

Cause for an RRC connection establishment request.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Establishment cause	M		Enumerated(Originating Speech Call, Originating CS Data Call, Originating PS Data Call, Terminating Speech Call, Terminating CS Data Call, Terminating PS Data Call, Emergency Call, Inter-system cell re-selection, Location Update (LAU & RAU), IMSI Detach, SMS, Other)	

NOTE: These causes shall be aligned with causes received from higher layers.

10.2.3.14 Failure cause

Cause for failure to perform the requested procedure.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Failure cause	M		Enumerated (Configuration unacceptable, physical channel failure, incompatible simultaneous reconfiguration~~)~~)	

10.2.3.15 Initial UE capability

This is the UE capability information given in the RRC connection request message.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Initial UE Capability Extension Indication	M		Boolean FALSE	A value of "False" indicates that the Initial UE capability is interpreted according to "Release 99 (first release)". If the value is set to "True", a new definition given in a future release is added to this information element.
Capability extension info	C-Extension			Note 1
Maximum number of AM entities	M		Enumerated (3, 4 or more)	If the maximum number of AM entities is three, only two of these entities shall be used for signalling. If the maximum number is four, three entities may be used. This IE needs to be defined as extensible for future releases.
Downlink DCH capability	M		Boolean	This IE refers to the UE capability Maximum number of simultaneous transport channels supported in downlink. This parameter indicates whether UE supports only FACH (false) or also DCHs (true).
Uplink DCH capability	M		Boolean	This IE refers to the UE capability Maximum number of simultaneous transport channels supported in uplink. This parameter indicates whether UE supports only RACH (false) or also DCHs (true).

NOTE 1: This information element may be defined in later releases.

Condition	Explanation
C-Extension	This IE is included only when Signalling link type extension indicator is TRUE.

10.2.3.16 Initial UE identity

This information element identifies the UE at a request of an RRC connection.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE UE id type	M			
>IMSI (GSM-MAP)			IMSI (GSM-MAP)	
>TMSI (GSM-MAP)			TMSI (GSM-MAP)	
>P-TMSI (GSM-MAP)			P-TMSI (GSM-MAP)	
>IMEI			IMEI	
>ESN (DS-41)			TIA/EIA/IS-2000-4	
>IMSI (DS-41)			TIA/EIA/IS-2000-4	
>IMSI and ESN (DS-41)			TIA/EIA/IS-2000-4	
>TMSI (DS-41)			TIA/EIA/IS-2000-4	
LAI (GSM-MAP)			TS 24.008	
RAI (GSM-MAP)			TS 24.008	

CHOICE *UE Id Type*	Condition under which the given *UE Id Type* is used
IMSI(GSM-MAP)	See section 8.5.1
TMSI(GSM-MAP)	See section 8.5.1
P-TMSI(GSM-MAP)	See section 8.5.1
IMEI	See section 8.5.1
ESN (DS-41)	See section 8.5.1
IMSI (DS-41)	See section 8.5.1
IMSI and ESN (DS-41)	See section 8.5.1
TMSI (DS-41)	See section 8.5.1

10.2.3.17 Integrity check info

The Integrity check info contains the RRC message sequence number needed in the calculation of XMAC-I [TS 33.102] and the calculated MAC-I.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Message authentication code	M		Integer ($0..2^{32}-1$)	MAC-I [TS 33.102]
RRC Message sequence number	M			The local hyper frame number (HFN) is concatenated with the RRC message sequence number to form the input parameter COUNT-I for the integrity protection algorithm.

10.2.3.18 Integrity protection hyper frame number

This hyper frame number (HFN) is used to initialise the integrity protection algorithm.
For integrity protection, the HFN is concatenated with the sequence number in the IE "Integrity check info" to form the parameter COUNT-I in the integrity protection algorithm. HFN is the most significant bits of COUNT-I. When the COUNT-I is initialised: COUNT-I = HFN (the LSB part of COUNT-I is set to zero).

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Integrity protection HFN	M			Start value for uplink and downlink COUNT-I

10.2.3.19 Integrity protection mode info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Integrity protection mode command	M		Enumerated(start/restart, modify)	
Integrity protection algorithm	M			UIA [TS 33.102]
Integrity protection initialisation number	C-*start/restart*		Integer ($0..2^{32}-1$)	FRESH [TS 33.102]

Condition	Explanation
Start/restart	The IE is present only when the IE "Integrity protection mode command" has the value "start/restart".

10.2.3.20 Inter-system handover failure cause

The purpose of this IE is to provide a reason for the failure of the Inter-system handover.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Inter-system handover failure cause	M		Enumerated(unspecified)	

~~10.2.3.21 Macro diversity capability (FDD)~~

~~Information Element/Group name~~	~~Presence~~	~~Range~~	~~IE type and reference~~	~~Semantics description~~
~~Maximum number of RLs~~	~~M~~		~~Integer~~	

~~Parameters~~	~~REFERENCE~~	~~TYPE~~	~~NOTE~~
~~Maximum number of RLs~~		~~M~~	

~~NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.~~

10.2.3.22 Maximum bit rate (FDD)

Indicates the maximum user bit rate allowed on a DCH controlled by DRAC procedure for the transmission period (Transmission time validity).

10.2.3.23 Number of RRC Message Transmissions

This IE indicates how many times the receiver of a message containing this IE shall transmit the RRC response message.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Number of RRC Message Transmissions			Integer(1..8)	

10.2.3.24 Paging cause

Cause for a CN originated page.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Paging cause	M		Enumerated(Terminating Speech Call, Terminating CS Data Call, Terminating PS Data Call, SMS, Other)	

NOTE: These causes shall be aligned with causes received from higher layers.

10.2.3.25 Paging record

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Paging originator	M		Enumerated (UTRAN,CN)	
Paging cause	C isCN			
CN domain identity	C isCN			
CHOICE CN Identity	C idleMode			
>IMSI (GSM-MAP)			IMSI (GSM-MAP)	
>TMSI (GSM-MAP)			TMSI (GSM-MAP)	
>P-TMSI (GSM-MAP)			P-TMSI (GSM-MAP)	
>IMSI (DS-41)			TIA/EIA/IS-2000-4	
>TMSI (DS-41)			TIA/EIA/IS-2000-4	
U-RNTI	C connected Mode			

Condition	Explanation
IsCN	This information element is included where the page is originated from the CN.
IdleMode	This IE is included for UE not having RRC Connection.
ConnectedMode	This IE is included for UE having RRC Connection.

CHOICE CN *Identity*	Condition under which the given *Identity* is chosen
IMSI	For idle mode pages
TMSI	For idle mode pages
P-TMSI	For idle mode pages
IMSI(DS-41)	For idle mode pages
TMSI(DS-41)	For idle mode pages

10.2.3.26 PDCP capability

Indicates which algorithms and which value range of their parameters are supported by the UE.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Supported algorithm types	M	0 to <maxAlgoTypeCount>	Enumerated (RFC2507)	
CHOICE *algorithm type*				
>RFC2507				
>>Maximum MAX_HEADER	O		integer (60..65535)	The largest header size in octets that may be compressed by the UE Default value is 65535.
>>Maximum TCP_SPACE	O		integer (3..255)	Maximum stored number of headers for TCP connections. Default value is 255.
>>Maximum NON_TCP_SPACE	O		integer (3..65535)	Maximum stored number of headers for non-TCP connections. Default value is 65535.

Range Bound	Explanation
MaxAlgoTypeCount	Maximum number of algorithm types specified in TS 25.323.

~~10.2.3.27 Power control capability~~

~~Information Element/Group name~~	~~Presence~~	~~Range~~	~~IE type and reference~~	~~Semantics description~~
~~Transmission power capability~~	~~M~~			

~~NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.~~

10.2.3.28 PRACH partitioning

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Access Service class		1 to 8		
>Available signature Start Index	M		Integer(0..15)	
>Available signature End Index	M		Integer(0..15)	
>Available sub-channel Start Index	M		Integer(0..11)	
>Available sub-channel End Index	M		Integer(0..11)	

The list of available signatures is renumbered from signature index 0 to signature index N-1, where N is the number of available signatures, starting with the lowest available signature number and continuing in sequence, in the order of increasing signature numbers.

- List of available signatures : 16 or less signatures are available.

  Ex : only signatures 0, 5, 10 and 15 are available, then :

  Signature 0 is : available signature index 0

  Signature 5 is : available signature index 1

  Signature 10 is : available signature index 2

  Signature 15 is : available signature index 3

The list of available access-slot sub-channels is renumbered from access-slot sub-channel index 0 to access-slot sub-channel index M-1, where M is the number of available access-slot sub-channels, starting with the lowest available access-slot sub-channel number and continuing in sequence, in the order of increasing access-slot sub-channel numbers.

- List of available Access Slot channels : 12 or less sub-channels are available.

  Ex : only sub-channels 0,1 ; 4,5 ; 8,9 are present, then :

  Sub-channel 0 is : available sub-channel index 0

  Sub-channel 1 is : available sub-channel index 1

  Sub-channel 4 is : available sub-channel index 2

  Sub-channel 5 is : available sub-channel index 3

  Sub-channel 8 is : available sub-channel index 4

  Sub-channel 9 is : available sub-channel index 5

One ASC has access to all the access-slot sub-channels between the Available sub-channel Start Index and the Available sub-channel End Index, and to all the signatures between the Available signature Start Index and the Available signature End Index.

NOTE: The above text may eventually be moved to a more appropriate location

10.2.3.29 Re-establishment timer

This information element indicates timer T314.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
T314	M		Integer(0..4095)	Value in seconds

10.2.3.30 Rejection cause

Cause for rejection of RRC connection establishment request.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Rejection cause	M		Enumerated(congestion, unspecified)	

10.2.3.31 Release cause

Cause for release of RRC connection.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Release cause	M		Enumerated (normal event, unspecified, pre-emptive release, congestion, re-establishment reject)	

10.2.3.32 RLC re-configuration indicator

This IE is used to re-configure AM RLC on c-plane.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
RLC re-configuration indicator	M		NULL	

10.2.3.33 Transmission probability (FDD)

Indicates the probability for a mobile to be allowed to transmit on a DCH controlled by DRAC procedure.

~~10.2.3.34 Transport channel support capability~~

~~Information Element/Group name~~	~~Presence~~	~~Range~~	~~IE type and reference~~	~~Semantics description~~
~~Maximum number of DCHs~~			~~Integer~~	
~~Support for Transport CH~~				

~~NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.~~

10.2.3.35 UE mode capability

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
System capability		0 to <maxSystemCount>	Enumerated (UMTS, GSM, Others)	
UMTS capability		0 to <maxModecount>	Enumerated (TDD, FDD)	
Chip rate capability				
Radio Frequency capability				
Variable duplex distance capability				

Range Bound	Explanation
MaxSystemCount	Maximum number of Systems supported by the UE
MaxModeCount	Maximum number of UMTS modes supported by the UE

NOTE: The WG1 and WG4 discussion should be concluded before the contents of this IE can be finalised.

10.2.3.36 UE radio capability

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Power control capability	M			
Code resource capability	M			
UE mode capability	M			
Transport CH support capability	O			
Ciphering capability	M			
Macro diversity capability	M			
FAUSCH usage support	O			Indicates true/false for "DCH allocation function", "USCH capability request function".
PDCP capability	O			IE shall be absent if PDCP is not supported by the UE.

NOTE: The overall discussion on UE capability parameters should be concluded before the contents of this information element can be finalised.

10.2.3.37 UE Timers and Counters in connected mode

This information element indicates timers and maximum values of each counter used in UE in connected mode.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
T301	M		Integer(1...8)	Value in seconds
N301	M		Integer(1..8)	
T302	M		Integer(1...8)	Value in seconds
N302	M		Integer(1..8)	
T303	M		Integer(1...8)	Value in seconds
N303	M		Integer(1..8)	
T304	M		Enumerated(200, 400...2000)	Value in milliseconds
N304	M		Integer(1..8)	
T307	M		Enumerated(5, 10..50)	Value in seconds
T308	M		Integer(40, 80...300)	Value in milliseconds
T309	M		Integer(1...8)	Value in seconds
T312	M		Integer (1..16)	Value in seconds
N312	M		Integer (1..1024)	Value in seconds
T313	M		Integer (1..16)	Value in seconds
N313	M		Integer (1..1024)	Value in seconds
N315	M		Integer (1..1024)	Value in seconds

10.2.3.38 UE Timers and Counters in idle mode

This information element indicates timers and maximum values of each counter used in UE in idle mode.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
T300	M		Integer(1...8)	Value in seconds
N300	M		Integer(1..8)	
~~T312~~	~~M~~			~~In sec~~
~~T313~~	~~M~~			~~In sec~~
~~N312~~	~~M~~			~~In sec~~
~~N313~~	~~M~~			~~In sec~~
~~N315~~	~~M~~			~~In sec~~

10.2.3.39 URA update cause

Indicates the cause for s URA update..

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
URA update cause	M		Enumerated(change of URA, periodic URA update, re-entered service area)	

10.2.3.40 U-RNTI

The U-RNTI (UTRAN Radio Network Temporary Identity) is allocated to an UE having a RRC connection and identifies the UE within UTRAN.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SRNC identity	M		Integer(0..4095)	
S-RNTI	M		Integer(0..1048575)	

10.2.3.41 Wait time

Wait time defines the time period the UE has to wait before repeating the rejected procedure.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Wait time			Integer(1..16)	Wait time in seconds

10.2.4 Radio Bearer Information elements

10.2.4.1 PDCP info

The purpose of the PDCP info IE is to indicate which algorithms shall be established and to configure the parameters of each of the algorithms.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Header compression information		0 to <Algorithm Count>		
PDCP PDU header	O		boolean	Whether a PDCP PDU header is existent or not. Default is TRUE.
>Algorithm type	M		Enumerated (RFC2507)	NOTE: The enumerated list contains currently only one specified type. Other values are FFS.
>Reconfiguration reset	O		boolean	Whether the algorithm shall be reset in the reconfiguration. Default value is TRUE.
>CHOICE *algorithm type*				
>>RFC2507				
>>>F_MAX_PERIOD	O		integer (1..65535)	Largest number of compressed non-TCP headers that may be sent without sending a full header. Default value is 256.
>>>F_MAX_TIME	O		integer (1..255)	Compressed headers may not be sent more than F_MAX_TIME seconds after sending last full header. Default value is 5.
>>>MAX_HEADER	O		integer (60..65535)	The largest header size in octets that may be compressed. Default value is 168.
>>>TCP_SPACE	O		integer (3..255)	Maximum CID value for TCP connections. Default value is 15.
>>>NON_TCP_SPACE	O		integer (3..65535)	Maximum CID value for non-TCP connections. Default value is 15.
>>>EXPECT_REORDERING	O		boolean	Whether the algorithm shall reorder PDCP SDUs or not. Default value is TRUE (reordering expected).

Range Bound	Explanation
AlgorithmCount	The number of algorithm types configured for PDCP entity.

10.2.4.2 Predefined radio configuration identity

This information element identifies a pre- defined radio parameter configuration.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Predefined radio configuration identity	M		Enumerated (0..15)	

10.2.4.3 Radio bearer activation time info

This IE contains the time, in terms of RLC sequence numbers, when a certain configuration shall be activated, for a number of radio bearers.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Radio bearer activation time		0 to <maxReconRBs>		
>RB identity	M			
>RLC sequence number	M		Integer (0..4095)	RLC SN [TS 25.322]

10.2.4.4 RB identity

An identification number for the radio bearer affected by a certain message.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
RB identity	M		Integer(0..31)	Values 0-3 shall only be used for signalling radio bearers

10.2.4.5 RB mapping info

A multiplexing option for each possible transport channel this RB can be multiplexed on.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Information for each multiplexing option		1 to <maxMuxOptionsCount>		
>Number of RLC logical channels		1 to 2		1 or 2 logical channels per RLC entity or radio bearer
>>Uplink transport channel type	M		Enumerated(DCH,RACH, CPCH,USCH)	CPCH is FDD only USCH is TDD only
>>Transport channel identity	O			This is the ID of a transport channel that this RB could be mapped onto.
>>Logical channel identity	O		Integer(1..16)	This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel.
>>MAC logical channel priority	O		Enumerated(1..8)	This is priority between a user's different RBs (or logical channels). The different priorities for this user's RBs are mapped (through the MAC's C/T MUX) to the TFC selection algorithm. Priority 1 shall have the highest priority and priority 8 the lowest.
>Number of RLC logical channels		1 to 2		1 or 2 logical channels per RLC entity or radio bearer
>>Downlink transport channel type	M		Enumerated(DCH,FACH, DSCH)	
>>Transport channel identity	O			
>>Logical channel identity	O		Integer(1..16)	

Range Bound	Explanation
MaxMuxOptionsCount	Maximum number of allowed multiplexing options that can be sent is 8

10.2.4.6 RLC info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Uplink RLC info				
>RLC mode	M		enumerated (Acknowledged, Non Acknowledged, Transparent)	
>Transmission RLC discard	C-*NonTrOp*			
>Transmission window size	C-*ACK*		Integer(1,8,16,32,128,256,512,768,1024,1536,2048,2560,3072, 3584,4096)	Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used.
>Polling info	C-*ACKOp*			
Downlink RLC info				
>RLC mode	M		enumerated (Acknowledged, Non Acknowledged,Transparent)	Indicates if Acknowledged, Unacknowledged or Transparent mode RLC should be used.
>In-sequence delivery	M		Boolean	Indication if RLC should preserve the order of higher layer PDUs when these are delivered.
>Reception RLC discard timer	C-*timer*		Enumerated(0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5)	Elapsed time in seconds before a SDU is discarded. Only present if timer based discard mode without explicit signalling is chosen.
>Receiving window size	C-*ACK*		Integer(1,8,16,32,128,256,512,768,1024,1536,2048,2560,3072, 3584,4096)	Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used.(Necessity is FFS.)
>Downlink RLC status Info	C-*ACKOp*			

Condition	Explanation
Timer	This IE is only sent if timer based discard is used without explicit signalling
NonTrOp	This IE is optional for UTRAN to send if IE "RLC mode" is "acknowledged" or "non-acknowledged"
AckOp	This IE is optional for UTRAN to send if IE "RLC mode" is "acknowledged"
Ack	This IE is only present if IE "RLC mode" is "acknowledged mode"

10.2.4.6.1 Transmission RLC Discard

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SDU Discard Mode	M		Enumerated(Timer based explicit, Timer based no explicit, Max_DAT retransmissions, No_discard)	Different modes for discharge the RLC buffer on the transmitter side; Timer based with explicit signalling, Timer based without explicit signalling or Discard after Max_DAT retransmissions. For unacknowledged mode only Timer based without explicit signalling is applicable. If No_discard is used, reset procedure shall be done after Max_DAT retransmissions.
Timer_discard	C-timer		Enumerated(0.1, 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 7.5)	Elapsed time in seconds before a SDU is discarded.
Max_DAT	C-discard		Enumerated(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40)	Number of retransmissions of a PU before a SDU is discarded.
Max_RST	C-no_discard		Enumerated(1, 4, 6, 8, 12 16, 24, 32)	The maximum number of retransmission of RESET PDU.

Condition	Explanation
Timer	This IE is only sent if timer based discard is used without explicit signalling
Discard	This IE is only sent when the SDU discard technique is to discard SDUs after a given number of PU re-transmissions
No_discard	This IE is only sent when the SDU discard is not used.

10.2.4.6.2 Polling info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Timer_poll_prohibit	O		Enumerated(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Minimum time between polls in ms
Timer_poll	O		Enumerated(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Started when poll is transmitted. New poll when timer expires and no STATUS received. Time in ms
Poll_PU	O		Enumerated(1,2,4,8,16,32 ,64,128)	Poll at every Poll_PU PU
Poll_SDU	O		Enumerated(1,4,16,64)	Poll at every Poll_SDU SDU
Last transmission PU poll	M		Boolean	Indicates if poll at last PU in transmission buffer
Last retransmission PU poll	M		Boolean	Indicates if poll at last PU in retransmission buffer
Poll_Window	O		Enumerated(50,60,70,80, 85,90,95,100)	Poll at Poll_Window % of transmission window
Timer_poll_periodic	O		Enumerated(0.1,0.2, 0.3, 0.4, 0.5, 0.75, 1, 2)	Timer for periodic polling. Timer in seconds

NOTE: At least one or more parameters are necessary when polling info is sent.

10.2.4.6.3 Downlink RLC STATUS info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Timer_Status_Prohibit	O		Enumerated(160, 320, 640, 1280)	Minimum time in ms between STATUS reports
Timer_EPC	O		Enumerated(50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 700, 800, 900, 1000)	Timer for EPC. Timer in ms
Missing PU Indicator	M		Boolean	Indicates if UE should send a STATUS report for each missing PU that is detected
Timer_STAUS_periodic	O		Enumerated(0.1,0.2, 0.3, 0.4, 0.5, 0.75, 1, 2)	Timer for periodic STATUS reports. Timer in seconds

10.2.5 Transport CH Information elements

10.2.5.1 Dynamic Control (FDD only)

Indicates if this transport channel is controlled by DRAC procedure or not.

10.2.5.2 Silent period duration before release (FDD only)

Indicates the maximum silent period duration before releasing the resource. This parameter may be merged with the Fkp-b parameter defined in the 'Transmission stop and resumption control' procedure defined in [1].

NOTE: [1] RAN/WG1 S1.14 document

10.2.5.3 Time duration before retry (FDD only)

Indicates the time duration before retrying to get the transmission permission on a DCH controlled by DRAC procedure, in case permission has not been granted.

10.2.5.4 Transmission time validity (FDD only)

Indicates the duration for which permission is granted on a DCH controlled by DRAC procedure.

10.2.5.5 Transparent mode signalling info

This information element points out a transport channel that is used for transparent mode signalling, and which type of message that is sent on the DCCH mapped on that channel.

There are two modes of this transparent mode signaling. Mode 1 controls all transport channels for one UE. Mode 2 only control a subset of the transport channels for one UE.

Information Element	Presence	Range	IE type and reference	Semantics description
Transport channel identity	M			Transport channel used for transparent mode signalling DCCH
CHOICE *Transparent signalling mode*				
>Mode 1				
>>Message type	M		Enumerated (TRANSPORT FORMAT COMBINATION CONTROL)	Indicates which type of message sent on the transparent mode signalling DCCH
Mode 2				
>>Controlled transport channels	M	1 to <MaxTrChCount>	Enumerated(1..64)	The transport channels that are effected by the rate control commands sent on this transparent mode DCCH

10.2.5.6 Transport channel identity

This information element is used to distinguish transport channels (both common and dedicated transport channels).

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Transport channel identity	M		Enumerated(1..64)	

10.2.5.7 Transport Format Combination Set

Indicates the allowed combinations of already defined Transport formats and the mapping between these allowed TFCs and the corresponding TFCI values.
For FDD, Where the UE is assigned access to one or more DSCH transport channels then the UTRAN has the choice of two methods for signalling the mapping between TFCI(field 2) values and the corresponding TFC:
Method #1 - TFCI range
The mapping is described in terms of a number of groups, each group corresponding to a given transport format combination (value of CTFC_DSCH). The CTFC_DSCH value specified in the first group applies for all values of TFCI(field 2) between 1 and the specified 'Max TFCI(field2) value'. The CTFC_DSCH value specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2) value' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value used by the UE in constructing its mapping table starting at the largest value reached in the previous group plus one.
Method #2 - Explicit
The mapping between TFCI(field 2) value and CTFC_DSCH is spelt out explicitly for each value of TFCI (field2).

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *DSCH*				
>FDD without access to DSCH assigned or TDD				This choice is made if the UE is not assigned any DSCH transport channels
>>CHOICE TFCS representation	M			
>>>Complete reconfiguration		1 to MaxTFCcount		
>>>>CTFC		1 to MaxTFCcount	Integer(0..MaxCTFC-1)	The first instance of the parameter *Transport format combination* corresponds to Transport format combination 0, the second to transport format combination 1 and so on. Integer number calculated according to clause 14.
>>>>Gain Factor β_c	O		Integer (0.. 15)	For DPCCH or control part of PRACH
>>>>Gain Factor β_d	O		Integer (0..15)	For DPCCH or data part of PRACH
>>>Removal		1 to MaxDelTFCcount		
>>>>TFCI		1 to MaxDelTFCcount	Integer(0.. MaxTFCIValue)	Removal of TFCI. The integer number(s) is a reference to the transport format combinations to be removed.
>>>Addition		1 to MaxAddTFCcount		
>>>>AddCTFC		1 to MaxAddTFCcount	Integer(0.. MaxCTFC-1)	Addition of TFCI. The integer number(s) is the calculated transport format combination that is added. The new TFC(s) is inserted into the first

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
				available position(s) in the TFCI (counting from zero).
>>>>Gain Factor β_c	O		Integer (0.. 15)	For DPCCH or control part of PRACH
>>>>Gain Factor β_d	O		Integer (0..15)	For DPCCH or data part of PRACH
>FDD with access to DSCH assigned				This choice is made if the UE is assigned one or more DSCH transport channels
>>Length of TFCI2	M		Integer (1..9)	This IE indicates the length measured in number of bits of TFCI(field2)
>>Transport format combination_DCH		1 to <MaxTFCI_1_Combs>		The first instance of the parameter *Transport format combination_DCH* corresponds to TFCI (field 1) = 1, the second to TFCI (field 1) = 2 and so on.
>>>CTFC_DCH	M		Integer(0..MaxCTFC_DCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DSCH transport channels which may be assigned
>>Choice *Signalling method*				
>>>TFCI range				
>>>>TFC mapping on DSCH		1 to <MaxNoTFCIGroups>		
>>>>>Max TFCI(field2) value	M		Integer(1..512)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC_DSCH applies
>>>>>>CTFC_DSCH	M		Integer(0..MaxCTFC_DSCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned
>>>Explicit				
>>>>Transport format combination_DSCH		1 to <MaxTFCI_2_Combs>		The first instance of the parameter *Transport format combination_DSCH* corresponds to TFCI (field2) = 1, the second to TFCI (field 2) = 2 and so on.
>>>>>CTFC_DSCH	M		Integer(0..MaxCTFC_DSCH-1)	Integer number calculated according to clause 14. The calculation of CTFC ignores any DCH transport channels which may be assigned

Range Bound	Explanation
MaxCTFC	Maximum value number of the CTFC value is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14.
MaxTFCCount	Maximum number of Transport Format Combinations.
MaxTFCValue	The max value of the Transport Format Combinations that currently is defined for this UE.

Range Bound	Explanation
MaxAddTFCIcount	Maximum number of Transport Format Combinations to be added.
MaxDelTFCcount	Maximum number of Transport Format Combinations to be removed.
MaxTFCI_1_Combs	Maximum number of TFCI (field 1) combinations (given by 2 raised to the power of the length of the TFCI (field 1))
MaxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI (field 2))
MaxNoTFCIGroups	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single value of CTFC_DSCH applies
MaxCTFC_DCH	Maximum value of CTFC_DCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DCH transport channels are taken into account in the calculation.
MaxCTFC_DSCH	Maximum value of CTFC_DSCH is calculated according to the following: $\sum_{i=1}^{I}(L_i - 1)P_i$ with the notation according to clause 14 where only the DSCH transport channels are taken into account in the calculation..

10.2.5.8 Transport Format Combination Set Identity (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TFCS ID	M		Integer (0...3)	Indicates the identity of every TFCS within a UE
Shared Channel Indicator	O		Boolean	Indicates use of shared channels.

10.2.5.9 Transport Format Combination Subset

Indicates which Transport format combinations in the already defined Transport format combination set are allowed.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE Subset representation	M			
>Minimum allowed Transport format combination number			Integer(0..MaxTFCValue-1)	The integer number is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Allowed transport format combination		1 to <maxTFCcount>	Integer(0..MaxTFCValue-1)	The integer number(s) is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Non-allowed transport format combination		1 to <MaxTFCcount>	Integer(0..MaxTFCValue)	The integer number(s) is a reference to the *Transport format combination,* which arrived at that position in the *Transport Format Combination Set.*
>Restricted TrCH information		1 to <MaxRstTrCHcount>		
>>Restricted TrCH identity	M		Integer(0..MaxTrCHValue)	The integer number(s) is a reference to the transport channel that is restricted.
>>Allowed TFIs	O	1 to <MaxTFcount>	Integer(0..MaxTFValue)	The integer number(s) is a reference to the transport format that is allowed. If no elements are given, all transport formats or the TrCH with non-zero rate are restricted.

Range Bound	Explanation
MaxTFCcount	Maximum number of Transport Format Combinations that could be sent as the limited set that the UE is allowed to use is 1023.
MaxTFCValue	The max value of the Transport Format Combinations that currently is defined for this UE.
MaxRstTrCHcount	Maximum number of Transport Channels that could be restricted.
MaxTrCHValue	Maximum value of the Transport Channels that currently is defined for this UE.
MaxTFcount	Maximum number of the Transport Formats that is defined.
MaxTFValue	Maximum value of the Transport Formats that is defined.

10.2.5.10 Transport Format Set (TFS)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *Transport channel type*	M			
>Dedicated transport channels	M			
>>Dynamic Transport Format Information		1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	
>>>>CHOICE *Transparent mode RLC PDU size*				
>>>>>Size type 1				1 bit granularity
>>>>>>Size part 1	M		Enumerated(1..128)	
>>>>>Size type 2				8 bit granularity
>>>>>>Size part 1	M		Enumerated(136, 144..256)	
>>>>>>Size part 2	O		Integer (1..7)	Added to size part 1.
>>>>>Size type 3				16 bit granularity
>>>>>>Size part 1	M		Enumerated(272, 288..1024)	
>>>>>>Size part 2	O		Integer (1..15)	Added to size part 1.
>>>>>Size type 4				64 bit granularity
>>>>>>Size part 1	M		Enumerated(1088, 1152..4992)	
>>>>>>Size part 2	O		Integer (1..63)	Added to size part 1.
>>>>CHOICE *Acknowledged mode RLC PDU size*				
>>>>>Size type 1			Enumerated(24,32..272)	8 bit granularity
>>>>>Size type 2			Enumerated(304, 336..1040)	32 bit granularity
>>>>>Size type 3			Enumerated(1104, 1168..4944)	64 bit granularity
>>>>CHOICE *Unacknowledged mode RLC PDU size*				
>>>>>Size type 1			Enumerated(16,24..264)	8 bit granularity
>>>>>Size type 2			Enumerated(296,328..1032)	32 bit granularity 1-3 octets
>>>>>Size type 3			Enumerated(1096,1160..5000)	64 bit granularity 1-7octets
>>>CHOICE mode				
>>>>TDD				
>>>>>Transmission time interval	C-TTIdynami	1 to <maxTTIco	Enumerated(10, 20, 40,	

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
	c	unt>	80)	
>>Semi-static Transport Format Information				
>>>Transmission time interval	C-TTIsemistatic		Enumerated(10, 20, 40, 80)	
>>>Type of channel coding			Enumerated(No coding, Convolutional, Turbo)	
>>>Coding Rate	C-Coding		Enumerated(1/2, 1/3)	
>>>Rate matching attribute			Integer(1..maxRM)	
>>>CRC size	M		Enumerated(0, 8, 12, 16, 24)	
>>>CHOICE mode				
>>>>TDD				
>>>>>2nd interleaving mode	O		Enumerated(Frame related, Timeslot related)	Frame or timeslot related interleaving. Default Frame related.
>Common transport channels				
>>Dynamic Transport Format Information		1 to maxTFcount		The first instance of the parameter *Dynamic transport format information* correspond to Transport format 0 for this transport channel, the second to transport format 1 and so on.
>>>Number of Transport blocks	M		Integer(0..4095)	
>>>CHOICE mode				
>>>>FDD				
>>>>>CHOICE *Transport block size*	C-Blocks			
>>>>>>Size type 1			Enumerated(48,56..296)	8 bit granularity
>>>>>>Size type 2			Enumerated(312, 328..1320)	16 bit granularity
>>>>>>Size type 3			Enumerated(1384, 1448..4968)	64 bit granularity
>>>>TDD				
>>>>>CHOICE *RLC mode*	C-Blocks			
>>>>>>CHOICE *Bit mode RLC PDU size*				
>>>>>>>Size type 1				1 bit granularity
>>>>>>>>Size part 1	M		Enumerated(1..128)	
>>>>>>>Size type 2				8 bit granularity
>>>>>>>>Size part 1	M		Enumerated(136, 144..256)	
>>>>>>>>Size part 2	O		Integer (1..7)	Bits Added to size part 1.
>>>>>>>Size type 3				16 bit granularity
>>>>>>>>Size part 1	M		Enumerated(	

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			272, 288..1024)	
>>>>>>>>Size part 2	O		Integer (1..15)	Bits Added to size part 1.
>>>>>>>Size type 4				64 bit granularity
>>>>>>>>Size part 1	M		Enumerated(1088, 1152..4992)	
>>>>>>>>Size part 2	O		Integer (1..63)	Bits Added to size part 1.
>>>>>>CHOICE *Octet mode RLC PDU size*				
>>>>>>>Size type 1				8 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(16,24..272)	
>>>>>>>Size type 2				32 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(304, 336..1040)	
>>>>>>>>Size Part 2	O		Integer (1..3)	Octets added to size part 1.
>>>>>>>Size type 3				64 bit granularity
>>>>>>>>Size Part 1	M		Enumerated(1104, 1168..4944)	
>>>>>>>>Size Part 2	O		Integer (1..7)	Octets added to size part 1.
>>>>>MAC Header Type	O		Integer (1..7)	Default is DCH MAC header type (only needed for TDD mode)
>>Semi-static Transport Format Information				
>>>Transmission time interval	C-TTIsemistatic		Enumerated(10, 20, 40, 80)	
>>>Type of channel coding	M		Enumerated(No coding, Convolutional, Turbo)	
>>>Coding Rate	C-Coding		Enumerated(1/2, 1/3)	
>>>Rate matching attribute	M		Integer(1..maxRM)	
>>>CRC size	M		Enumerated(0, 8, 12, 16, 24)	

Range Bound	Explanation
maxTTIcount	Denotes the amount of different TTI that are possible for that transport format.

Condition	Explanation
Blocks	This IE is only present if IE "Number of Transport Blocks" is greater than 0.
Coding	This IE is only present if IE "Type of channel coding" is "Convolutional"
TTIdynamic	This IE is mandatory if not defined as semistatic parameter. Otherwise it is absent.
TTIsemistatic	This IE is mandatory if not defined as dynamic parameter. Otherwise it is absent.

Range Bound	Explanation
MaxTFcount	Maximum number of different transport formats that can be included in the Transport format set for one transport channel is 32.
MaxRM	Maximum number that could be set as rate matching attribute for a transport channel is 256.

CHOICE *RLC mode*	Condition under which the given *RLC mode* is chosen
Bit mode RLC PDU size	The RLC entity mapped to this transport channels can generate bit specific RLC PDU sizes
Octet mode RLC PDU size	The RLC entity mapped to this transport channels can only generate octet aligned RLC PDU sizes

CHOICE *Transport channel type*	Condition under which the given *Transport channel type* is chosen
Dedicated transport channels	The transport channel that is configured with this TFS is of type DCH
Common transport channels	The transport channel that is configured with this TFS is of a type not equal to DCH

NOTE: The parameter "rate matching attribute" is in line with the RAN WG1 specifications. However, it is not currently in line with the description in 25.302.

10.2.6 Physical CH Information elements

10.2.6.1 AICH Info (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Secondary scrambling code	O		Integer(0..14)	
Channelisation code	M		Integer(0..255)	SF is fixed and equal to 256
STTD indicator	M		Boolean	
AICH transmission timing	M		Enumerated (0, 1)	

10.2.6.2 AICH Power offset (FDD only)

This is the power per transmitted Acquisition Indicator minus power of the Primary CPICH.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
AICH Power offset	M			

10.2.6.3 ASC Info (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Access Service Class 1 Support	O		Boolean	Each PRACH info IE in System Information is associated with an ASC info IE. Any one RACH can support multiple ASCs.
Access Service Class 2 Support	O		Boolean	
Access Service Class 3 Support	O		Boolean	

10.2.6.4 Block STTD indicator (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Block STTD indicator	M		Boolean	

10.2.6.5 Constant value (FDD)

This constant value is used by the UE to calculate the initial output power on PRACH according to the Open loop power control procedure.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Constant value	M		Enumerated(-10..10)	In dB and 1 dB granularity

10.2.6.6 CPCH persistency values (FDD only)

This IE is dynamic and is used by RNC for load balancing and congestion control. This is broadcast often in the system information message.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CPCH set ID	M			Identifier for CPCH set info.
PV_CPCHn	M	1 to <maxCPCHs>		Persistency value for CPCHn. One PV for each CPCH channel in this CPCH set.

Range Bound	Explanation
MaxCPCHs	Maximum number of CPCH channels in a CPCH set (max=16 with 1 signature per channel)

10.2.6.7 CPCH set info (FDD only)

This IE may be broadcast in the System Information message or assigned by SRNC. It is pseudo-static in a cell.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CPCH set ID	M			Indicates the ID number for a particular CPCH set allocated to a cell.
AP preamble code	M			256 chip preamble code for AP in UL
AP-AICH channelisation code	M			256 chip channelisation code for AP-AICH in DL
AP access slot subchannel	O	1 to <maxSubChNum>	Enumerated (0,1,2,….11)	Lists the set of subchannels to be used for AP access preambles. Note: if not present, all subchannels are to be used without access delays.
CD preamble code	M			256 chip preamble code for CD in UL
CD-AICH channelisation code	M			256 chip channelisation code for CD-AICH in DL
CD access slot subchannel	O	1 to <maxSubChNum>	Enumerated (0,1,2,….11)	Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays.
CD signature code	O	1 to <maxSigNum>	Enumerated (0,1,2,….15)	Signature code for CPCH channel CD preamble in UL. Note: if not present, all signatures are available for use.
CPCH channel info	M	1 to <maxCPCHs>		
>UL scrambling code	M			For CPCH message part
>UL channelisation code	M			For CPCH message part
>DL channelisation code	M			For DPCCH in CPCH message part
>NF_{max}	M			Max packet length in frames for CPCH message partt
>AP signature code	M	1 to <maxSigNum>	Enumerated (0,1,2,….15)	AP preamble signature codes for selection of this CPCH channel.
>PCP length	M		Enumerated (0 access slots, 8 access slots)	Indicates length of power control preamble, 0 access slots (no preamble used) or 8 access slots

Range Bound	Explanation
MaxCPCHs	Maximum number of CPCH channels in a CPCH set (max=16 with 1 signature per channel)
MaxSubChNum	Maximum number of available sub channels (max = 12 subchannels defined)
MaxSigNum	Maximum number of available signatures (max = 16)

NOTE: Whether several CPCH Set Info with different QoS can be set in a cell is FFS.

10.2.6.8 Default DPCH Offset Value (FDD only)

Indicates the default offset value within interleaving size at a resolution of 512chip (1/5 slot) to offset CFN in the UE. This is used to distribute discontinuous transmission periods in time and also to distribute NodeB-RNC transmission traffics in time. Even though the CFN is offset by DOFF, the start timing of the interleaving will be the timing that "CFN mod (interleaving size)"=0 (e.g. interleaving size: 2,4,8) in both UE and SRNC.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Default DPCH Offset Value	M		Enumerated (0, 512, 1024..306688)	Number of chip, granularity of 512 chip. 0 to 599 times 512 chip.

10.2.6.9 Downlink DPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>DL channelisation code		1 to <maxChan count>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	O		Integer (0..14)	
>>>Spreading factor	M		Enumerated(4, 16, 32, 64, 128, 256, 512)	
>>>Code number	M		Integer(0..maxCodeNum)	
>>Fixed or Flexible Position	M		Enumerated (Fixed, Flexible)	
>>TFCI existence	M		Boolean	
>>Number of bits for Pilot bits	C-SF		Enumerated (2,4,8 bits)	
>>TX Diversity Mode	M			
>>SSDT Cell Id	O			
>TDD				
>>Activation Time	O		Integer (0...255)	Frame number start of allocation period. Default is activation time in UE information elements.
>>Duration	O		Integer (0...255)	Total number of frames. Default = 0 (for infinite)
>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>Puncturing Limit	M			
>>Repetition period	O		Integer (1 ... Repetition period -1)	Repetition period of the DPCHs. Default value is 1.
>>Repetition length	O			Length of the allocation for each repetition period. Default value is 1.
>>Individual Timeslot info		1 to < max Timeslot count>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
>>>channelisation code		1 to <max Codes count>	Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)...(16/16))	The first instance of the parameter Channelisation code corresponds to the first DPCH in that timeslot that shall be used first by the physical layer, the second to the DPCH in that timeslot that shall be used second and so on.
>>>Timeslot	M		Integer (0...14)	Timeslot within a frame.
>>>TFCI presence	O		Boolean	If TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.
>>>Burst type	O		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. Default is burst type 1.
>>>Midamble shift	O		Integer (0...MaxMidambleShift – 1)	Midamble shift for this timeslot. Default is set by layer 1

Condition	Explanation
STTD	This IE is only sent if STTD is applied
SF	This IE is only sent if SF=128 or 256 is applied. If SF=256, value is 2,4 or 8 If SF=128, value is 4 or 8

Range Bound	Explanation
MaxChancount	Maximum number of channelisation codes used for DL DPCH
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxTimeslotcount	Maximum number of timeslots used for DPCHs
MaxCodesCount	Maximum number of codes for one timeslots
MaxMidambleShift	Maximum number of Midamble Shifts

10.2.6.10 Downlink DPCH power control information

This information element indicates the range of SIR target values and the initial SIR target value to be set in the UE on this physical, channel for the downlink inner loop power control.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DPC Mode	M		Enumerated (mode0, mode1)	
Initial SIR target value	M		Enumerated(-10, -9.5..20)	Initial SIR value to be used for the DL closed loop power control. Granularity of 0.5 dB.
Min SIR target value	M		Enumerated(-10, -9.5..20)	Minimum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.
Max SIR target value	M		Enumerated(-10, -9.5..20)	Maximum SIR value that can be set by the DL closed loop power control. Granularity of 0.5 dB.

10.2.6.11 Downlink Outer Loop Control

This information element indicates whether the UE is allowed or not to increase its downlink SIR target value above the current value.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DL Outer loop control	M		Boolean	

10.2.6.12 DPCH compressed mode info (FDD only)

This information element indicates the parameters of the downlink compressed mode to be used by the UE in order to perform inter-frequency measurements.

Information Element/Group name	Presence	\Multi	IE type and reference	Semantics description
TGL	M		Enumerated(1..15)	Transmission Gap length expressed in number of slots
CFN	M		Enumerated(0..255)	Connection Frame Number when the first compressed frame starts
SN	M		Enumerated(0..14)	Slot number when the transmission gap starts (within the CFN)
TGP1	M		Enumerated(1..256)	The period of repetition of a set of consecutive frames containing up to 2 transmission gaps.
TGP2	O		Enumerated(1..256)	If TGP2 is included, TGP1 is used for the 1st and the consecutive odd gap periods and TGP2 is used for the even ones.
TGD	M		Enumerated(0..35)	Transmission gap distance indicates the number of frames between two consecutive transmission gaps within a transmission gap period. If there is only one transmission gap in the transmission gap period, this parameter shall be set to zero.
PD	M		Enumerated(1..35, Infinity)	The pattern duration is the total time of the compressed mode pattern (all consecutive TGPs) expressed in number of frames.
PCM	M		Enumerated ('mode 0', ' mode 1'.	Power control mode during the frame after the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied
PRM	M		Enumerated ('mode 0', ' mode 1'.	Power resume mode is the uplink power control algorithm to be used to compute the initial transmit power after the compressed mode gap.
UL/DL mode	M		Enumerated ('DL only', 'UL/DL')	Defines whether only DL or combined UL/DL compressed mode is used.
Compressed mode method	M		Enumerated ('puncturing', 'SF/2', 'none')	Method for generating compressed mode gap
Scrambling code change	C if SF/2		Enumerated ('code change', 'no code change'.	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.
Downlink frame type	M		Enumerated	

Information Element/Group name	Presence	\Multi	IE type and reference	Semantics description
			('A' or 'B')	
DeltaSIR	M		Enumerated(0, 0.5..7.5)	Delta in DL SIR target value to be set in the UE during the compressed frames Granularity is 0.5 dB.
DeltaSIRafter	M		Enumerated(0, 0.5..7.5)	Delta in DL SIR target value to be set in the UE one frame after the compressed frames . Granularity is 0.5 dB.

Condition	Explanation
SF/2	This information element is only sent when the value of the "Compressed mode method" IE is "SF/2".

10.2.6.13 Dynamic persistence level

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Dynamic persistence level	M			

10.2.6.14 Frequency info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE mode				
>FDD				
>>UARFCN uplink (Nu)	M		Enumerated(0..698)	[25.101]
>>UARFCN downlink (Nd)	O		Enumerated(175..623)	[25.101]
>TDD				
>>UARFCN (Nt)	M		Enumerated(0..698)	[25.102]
CHOICE *mode*				
>FDD				
>>Duplex distance	O			Default = 190 MHz
Chip rate	O			Default = 3.84 Mcps
Radio Access Mode	O		Enumerated (TDD, FDD)	Identifies whether the UTRA RF Channel Number corresponds to FDD or TDD.

10.2.6.15 Gated Transmission Control info (FDD only)

This IE is used to start or stop uplink(if possible)/downlink gated transmission of DPCCH.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Gating pattern	M		Enumerated (periodic, random-)	
Gating rate	M		Enumerated (Full rate,1/3 , 1/5 or 0(FFS))	Indicates gated transmission rate

10.2.6.16 Maximum allowed UL TX power

This information element indicates the maximum allowed uplink transmit power.

Information Element	Presence	Range	IE type and reference	Semantics description
Maximum allowed UL TX power			Enumerated(-50..33)	In dBm

10.2.6.17 PDSCH code mapping (FDD only)

This IE indicates the association between each possible value of TFCI(field 2) and the corresponding PDSCH channelisation code. There are three ways that the UTRAN must choose between in order to signal the mapping information, these are described below. The signalling capacity consumed by the different methods will vary depending on the way in which the UTRAN configures usage of the DSCH. In each case the location of the PDSCH code tree root is signalled. A given PDSCH channelisation code within the PDSCH code tree is then identified by spreading factor, SF_{α} and code number $(0..(SF_{\alpha} / SF_{root})-1)$, where SF_{root} is the SF of the root of the PDSCH code sub-tree.

Method #1 - Using code range

The mapping is described in terms of a number of groups, each group associated with a given spreading factor. The UE maps TFCI(field2) values to PDSCH codes in the following way. The PDSCH code used for TFCI(field 2) = 1 , is given by the SF and code number = 'PDSCH code start' of Group = 1. The PDSCH code used for TFCI(field 2) = 2 , is given by the SF and code number = 'PDSCH code start' + 1. This continues, with unit increments in the value of TFC mapping to unit increments in code number up until the point that code number = 'PDSCH code stop'. The process continues in the same way for the next group with the TFCI(field 2) value used by the UE when constructing its mapping table starting at the largest value reached in the previous group plus one. In the event that 'PDSCH code start' = 'PDSCH code stop' (as may occur when mapping the PDSCH root code to a TFCI (field 2) value) then this is to be interpreted as defining the mapping between the channelisation code and a single TFCI (i.e., TFCI(field 2) should not be incremented twice).

Method #2 - Using TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given PDSCH channelisation code. The PDSCH code specified in the first group applies for all values of TFCI(field 2) between 1 and the specified 'Max TFCI(field2)'. The PDSCH code specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2)' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value starting at the largest value reached in the previous group plus one.

Method #3 - Explicit

The mapping between TFCI(field 2) value and PDSCH channelisation code is spelt out explicitly for each value of TFCI (field2)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Root of PDSCH sub tree				
>Spreading factor	M		Enumerated(4, 8, 16, 32, 64, 128, 256, 512)	
>Code number	M		Integer(0..maxCodeNumComp-1)	
Choice *signalling method*				
>code range				
>>PDSCH code mapping		1 to <MaxNoCodeGroups>		
>>Spreading factor	M		Enumerated(4, 8, 16, 32,	

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			64, 128, 256, 512)	
>>>PDSCH code start				
>>>>Code number	M		Integer(0..maxCodeNumDSCH-1)	
>>>PDSCH code stop				
>>>>Code number	M		Integer(0..maxCodeNumDSCH-1)	
>TFCI range				
>>DSCH mapping		1 to <MaxNoTFCIGroups>		
>>>Max TFCI(field2) value	M		Integer(1..512)	This is the maximum value in the range of TFCI(field 2) values for which the specified PDSCH code applies
>>>PDSCH code				
>>>>Spreading factor	M		Enumerated(4, 8, 16, 32, 64, 128, 256, 512)	
>>>>>Code number	M		Integer(0..maxCodeNumDSCH-1)	
>Explicit				
>>>PDSCH code		1 to MaxTFCI_2_Combs		The first instance of the parameter *PDSCH code* corresponds to TFCI (field2) = 1, the second to TFCI(field 2) = 2and so on.
>>>>Spreading factor	M		Enumerated(4, 8, 16, 32, 64, 128, 256, 512)	
>>>>>Code number	M		Integer(0..maxCodeNumDSCH-1)	

Range Bound	Explanation
MaxCodeNumComp	Maximum number of codes at the defined spreading factor, within the complete code tree.
MaxCodeNumDSCH	Maximum number of codes at the defined spreading factor within the part of the code tree occupied by the PDSCH sub-tree.
MaxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI field 2)
MaxNoTFCIGroups	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single PDSCH code applies.
MaxNoCodeGroups	Maximum number of groups, each group described in terms of a range of PDSCH channelisation code values for which a single spreading factor applies.

10.2.6.18 PDSCH info (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Activation time	M		Integer (0...255)	Frame number start of allocation period. Default is Activation time in UE information elements
Duration	M		Integer (0...255)	Total number of frames
Repetition Period	O		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period Default value is 1
Repetition length	O		Integer (1 ... Repetition length –1)	. Default value is 1
TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
Puncturing Limit	M			
Individual Timeslot info		1 to <maxTimeslotcount>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>channelisation codes	M	1 to <max codes count>	Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8). (16/1)... (16/16))	The first instance of the parameter Channelisation code corresponds to the first PDSCH in that timeslot that shall be used first by the physical layer, the second to the PDSCH in that timeslot that shall be used second and so on.
>Timeslot	M		Integer (0...14)	Timeslot within a frame
TFCI existence	O		Boolean	If the TFCI exists it shall be coded in the first PDSCH in this timeslot. Default value is No TFCI.
>Burst Type	O		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. Default is burst type 1.
>Midamble Shift	O		Integer (0... max Midamble Shift is –1)	Midamble shift for this timeslot. Layer 1 sets default.

Range Bound	Explanation
MaxTimeslotcount	Maximum number of timeslots used for PDSCHs
Max Codescount	Maximum number of codes for PDSCH

10.2.6.19 PDSCH with SHO DCH Info (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DSCH radio link identifier	M		Integer(0..511)	This parameter indicates on which radio link the user will be allocated resource on the DSCH. The CPICH scrambling code will be used for this purpose.
TFCI Combining set				This is used to indicate which of the downlink TFCI(field 2) transmissions made on the DPCCHs within the active set should be soft combined on the physical layer.
Radio link identifier		0 to <MaxCombineSet>	Integer(0..511)	The CPICH scrambling code is used for this purpose

Range Bound	Explanation
MaxCombineSet	Maximum number of radio links in the DCH active set transmitted from BS's under the CRNC from which the DSCH is being scheduled

10.2.6.20 PICH Info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>Secondary scrambling code	O		Integer(0..14)	
>>Channelisation code	M		Integer(0..25 5)	SF is fixed and equal to 256
>>Number of PI per frame	M		Enumerated (18, 36 72 144)	
>>STTD indicator	M		Boolean	
>TDD				
>>Channelisation code	O		Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)...(16/16))	Default is the channelisation code used by the SCCPCH carrying the associated PCH.
>>Timeslot	O		Integer(0...14)	Default is the timeslot used by the SCCPCH carrying the associated PCH.
>Burst type	O		Enumerated (Typ1,Typ2)	Default is the burst used by the SCCPCH carrying the associated PCH.
>>Midamble shift	O		Integer (0...maxMidambleShift – 1)	Default is the midamble shift used by the SCCPCH carrying the associated PCH.
Offset	O		Integer (0...Repetition period -1)	SFN mod Repetitionperiod = Offset.
>>Repetition period	O		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period of the PICH. Default value is 64.
>>Repetition length	O		Integer (2, 4, 8)	Length of the allocation for each repetition period. Default value is 2.
>>Paging indicator length	O		Integer (4, 8, 16)	Indicates the length of one paging indicator. Default is 4.

10.2.6.21 PICH Power offset (FDD only)

This is the power transmitted on the PICH minus power of the Primary CPICH.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
PICH Power offset	M			

10.2.6.22 PRACH info (for FAUSCH) (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Fast access slot		1 to <maxAS>		
Preamble spreading code		1 to <maxPreambleSC>		
Preamble signature		1 to <maxPreambleSigs>		
FAUSCH usage				Indicates true/false for "use for DCH allocation", "use for USCH capability request".

Range Bound	Explanation
MaxAS	Number of access slots for the preambles (Every 16 chips)
MaxPreambleSC	Number of preamble spreading codes
MaxPreambleSigs	Number of allowed preamble signatures

10.2.6.23 PRACH info (for RACH)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Persistence factor N	M			0-1 step ffs
CHOICE *mode*				
>FDD				
>>Available Signature		1 to <maxSigNum>		
>>>Signature	M		Enumerated (0,1.2…..15)	
>>Available SF		1 to <maxSf>		
>>>SF	M		Enumerated (32,64,128,256 chip/sym)	
>>Scrambling code word number	M		Enumerated (0,1.2…..255)	
>>Puncturing Limit	M		Enumerated(0.40, 0.44..1)	Granularity of 0.04
>>Available Sub Channel number		1 to < maxSubChNum >		
>>>Sub Channel number	M		Enumerated (0,1,2,….11)	
>>>RACH message length	M		Enumerated (10 ms, 20 ms)	The 20 ms length is only used for minimum RACH payload (ffs)
>TDD				
>>Timeslot	M		Integer (0...14)	
>>Channelisation code	M		Enumerated ((8/1)...(8/8), (16/1)...(16/16)	1:1 mapping between spreading code and midamble shift
>>Max PRACH Midamble Shifts	O		Enumerated (4,8)	The maximum number of midamble shifts for the PRACH: 4 or 8. If no number is specified the default value 8 applies.
>>PRACH Midamble	O		Enumerated (1,2)	Direct or inverted midamble

Range Bound	Explanation
MaxSubChNum	Maximum number of available sub channels = 12
MaxSigNum	Maximum number of available signatures = 16
MaxSf	Maximum number of available SF = 4

~~10.2.6.24 PRACH power control info (FDD only)~~

~~Information Element/Group name~~	~~Presence~~	~~Range~~	~~IE type and reference~~	~~Semantics description~~
~~UL interference~~	~~M~~		~~Enumerated(-110..-70)~~	~~In dBm~~
~~Constant Value~~	~~M~~		~~Enumerated(-10..10)~~	~~In dBm~~
~~CHOICE mode~~				
~~>FDD~~				
~~>>Primary CPICH DL TX power~~	~~M~~		~~Enumerated(6..43)~~	~~In dBm~~
~~>>Power offsetΔP_0~~	~~M~~		~~Enumerated(-10..10)~~	~~Power step when no acquisition indicator is received. In dBm~~
~~>>Power offsetΔP_1~~	~~M~~		~~Enumerated(-10..10)~~	~~Power step when negative acquisition is received. In dBm~~
~~>>Power offset• Pp-m~~	~~M~~		~~Enumerated(-5..10)~~	~~Power offset between preamble and the message part. In dBm~~
~~>TDD~~				
~~>>Primary CCPCH DL Tx power~~	~~M~~			

~~NOTE: The usage of these parameters needs clarification and is also dependent on the WG1 RACH discussions.~~

10.2.6.25 PRACH power offset (FDD)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Power offset P0	M		Enumerated(-10..10)	Power step when no acquisition indicator is received. In dB and 1 dB granularity
Power offset P1	M		Enumerated(-10..10)	Power step when negative acquisition is received In dB and 1 dB granularity
Power offset P p-m	M		Enumerated(-5..10)	Power offset between preamble and the message part In dB and 1 dB granularity

10.2.6.26 Primary CCPCH DL TX Power (TDD only)

Information Element/group name	Presence	Range	IE type and reference	Semantics description
Primary CCPCH DL Tx Power	M		Enumerated(6..43)	In dBm and 1 dB granularity

10.2.6.27 Primary CCPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>STTD indicator	M		Boolean	
>TDD				
>>Timeslot	M		Integer (0...maxTSc ount)	PSCH timeslot
>>Cell parameters ID	C-MessageT ype		Integer (0...127)	For the cell parameter table
>>Sync case	C-MessageT ype		Enumerated (1, 2, 3)	Case 1,2, or 3
>>Offset	O		Integer (0... Repetition period-1)	SFN modulo Repetition period = offset. Default value is 0.
>>Repetition period	O		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period of the PCCPCH. Default value is 1.
>>Repetition length	O		Integer (1...Repetitio n period - 1)	Length of the allocation for each repetition. Default value is 1.
>>Block STTD indicator	O			

Condition	Explanation
C-MessageType	Mandatory in HANDOVER COMMAND message

Range Bound	Explanation
MaxTScount	In synchronisation case 2 and 3 MaxTScount is 6. In synchronisation case 1 MaxTScount is 14.

10.2.6.28 Primary CPICH DL Tx power (FDD)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Primary CPICH DL Tx Power	M		Enumerated(6..43)	In dBm and 1 dB granularity

10.2.6.29 Primary CPICH info (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Primary scrambling code	M		Enumerated(0..511)	

10.2.6.30 PUSCH info (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Activation time	M		Integer (0..255)	Frame number start of allocation period. Default is Activation time in UE information elements
Duration	M		Integer (0..255)	Total number of frames
Puncturing Limit	M			
TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
Repetition Period	O		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period of the DPCHs. Default value 1
Repetition length	O		Integer (1 ... Repetition length –1)	Length of the allocation for each repetition period. Default value is 1
Individual Timeslot info		1 to <maxTimeslotcount>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>channelisation code			Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)... (16/16))	The first instance of the parameter Channelisation code corresponds to the first PUSCH in that timeslot that shall be used first by the physical layer, the second to the PUSCH in that timeslot that shall be used second and so on.
>Timeslot	M		Integer (0...14)	Timeslot number
TFCI existence	O		Boolean	If the TFCI exists it shall be coded in the first PUSCH in this timeslot. Default value is No TFCI.
>Burst Type	M		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. Default is burst type 1.
>Midamble Shift	M		Integer (0...maxMidambleShift – 1)	Midamble shift for this timeslot. Layer 1 sets default.

Range Bound	Explanation
MaxPUSCHTimeslotcount	Maximum number of timeslots used for PUSCHs
MaxCodesCount	Maximum number of codes for PUSCH

10.2.6.31 PUSCH power control info (TDD only)

Interference level measured for a frequency at the UTRAN access point used by UE to set PUSCH output power.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UL Maximum SIR	M		Enumerated (.1dB steps)	Maximum UE transmit power limit
UL target SIR	M			
UL Minimum SIR	O			

10.2.6.32 RF channel number priority

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
RF channel number priority	M			Enable the setting of priority of the UTRA RF Channel Number parameter, to facilitate efficient system/ cell/ channel identification and selection processes

NOTE: a Liaison has been sent to determine whether this IE is necessary

10.2.6.33 Secondary CCPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Selection Indicator	C-BCCH		Enumerated (On, Off)	
CHOICE *mode*				
>FDD				
>>Secondary scrambling code	O		Integer (0..14)	
>>STTD indicator	M		Boolean	
>>Spreading factor	M		Enumerated(4, 16, 32, 64, 128, 256)	
>>Code number	M		Integer(0..maxCodeNum)	
>>Pilot symbol existence	M		Boolean	
>>TFCI existence	M		Boolean	
>>Fixed or Flexible Position	M		Enumerated (Fixed, Flexible)	
>>Timing Offset	O			Time difference between PCCPCH
>TDD				
>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>Repetition period	O		Integer (1, 2, 4, 8, 16, 32, 64)	Repetition period of the SCCPCH Default value is 1.
>>Repetition length	O		Integer (1...Repetitionperiod – 1)	Length of the allocation for each repetition. Default value is 1.
>>Offset	O		Integer (0...Repetition Period -1)	SFN modulo Repetition period = offset. Default value is 0.
>>lisation code		1 to < max Codes count >	Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)...(16/16))	The first instance of the parameter Channelisation code corresponds to the first code in that timeslot that shall be used first by the physical layer, the second to the code in that timeslot that shall be used second and so on.
>>Time slot	M		Integer (0...14)	Timeslot within a frame
>>TFCI existence	O		Boolean	If the TFCI exists it shall be coded in the first code in this timeslot. Default is No TFCI
>>Burst type			Enumerated(Type1, Type2)	Long or short midamble used in this timeslot. Default is burst type 1
>>Midamble shift	O		Integer (0...max Midamble	Midamble shift of this timeslot. Layer 1 sets default.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			Shift-1)	

Condition	Explanation
BCCH	This IE is only sent when BCCH is used

Range Bound	Explanation
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxCodesCount	Maximum number of codes in one timeslot.

10.2.6.34 Secondary CPICH info (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DL scrambling code	C-*PrimCPICH*		Enumerated(0..511)	
Channelisation code	M		Enumerated(0..255)	

Condition	Explanation
PrimCPICH	This IE is only included if the DL scrambling code is different to that of the primary CPICH

10.2.6.35 SSDT cell identity (FDD only)

This IE is used to associate a cell identity with a given radio link

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Temporary id	M		Enumerated (a, b, …, h)	

10.2.6.36 SSDT indicator (FDD only)

This information element indicates the status (e.g. initiated/terminated) of the Site Selection
Diversity Transmit power control (SSDT). It is used to change the SSDT status. The parameter 'code word set' indicates how cell identities are coded (using many bits or few, values are long, medium, or short).

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
S field	M		Enumerated (1, 2 bits)	
Code Word Set	M		Enumerated (long, medium, short, SSDT off)	

NOTE: These parameters shall be set optinally associated with DL DPCH info but not for each RL.

10.2.6.37 TFC Control duration

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TFC Control duration	M		Integer (1..16)	Defines the period in multiples of 10 ms frames for which the defined TFC sub-set is to be applied.

10.2.6.38 TFCI Combining Indicator (FDD only)

This IE indicates whether the TFCI (field 2) which will be transmitted on the DPCCH of a newly added radio link should be soft combined with the others in the TFCI (field 2) combining set. This IE is only sent when the UE is in Cell_DCH state with a DSCH transport channel assigned.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TFCI combining indicator	M		Boolean	

10.2.6.39 Timing Advance (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UL Timing Advance	M		Integer (0..255)	

10.2.6.40 TPC combination index (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
TPC combination index	M		Enumerated(0..5)	Radio links with the same index have TPC bits, which for the UE are known to be the same.

10.2.6.41 TX Diversity Mode (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Mode	M		Enumerated (none, STTD, closed loop mode1, closed loop mode2)	Associated with DL DPCH info (but not for each RL)

NOTE: These parameters shall be set optinally associated with DL DPCH info but not for each RL.

10.2.6.42 UL interference (FDD)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UL interference	M		Enumerated(-110..-70)	In dBm and 1 dB step

10.2.6.43 Uplink DPCH info

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>UL scrambling code				What short or long uplink scrambling code a certain UE should use
>>>Scrambling code type	M		Enumerated(short, long)	
>>>Scrambling code number	M		Integer(0..16 777215)	(24 bits)
>>Number of DPDCH	M		Integer(1.. maxDPDCH count)	
>>>DPDCH channelisation code	C-*Single*		Enumerated(4, 8, 16, 32, 64, 128, 256)	SF of the channelisation code for data part
>>TFCI existence	M	Boolean		
>>Number of FBI bits	O		Enumerated (1, 2 bits)	If neither SSDT nor FB Mode Transmit Diversity Signalling is supported, this parameter is not needed and the number of FBI bits is set to "0".
>>Puncturing Limit	M			
>TDD				
>>Puncturing Limit	M		Enumerated(0.40, 0.44..1)	Granularity of 0.04
>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>Activation Time	O		Integer (0...255)	Frame number start of allocation period Default is the Activation time in the UE information elements
>>Duration	O		Integer (0...255)	Total number of frames Default = 0 (for infinite).
>>Repetition period	O		Integer (1,2,4,8,16,3 2,64)	SFN modulo 64 = repetition period. Default value is 1.
>>Repetition length	O		Integer (1... Repetition period – 1)	Length of the allocation for each repetition period. Default value is 1.
>>Individual timeslot info		1 to < max Timeslot		The first instance of the parameter Individual Timeslot

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
		count>		Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.
>>>channelisation code		1 to < max Codes count >	Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)...(16/16))	Channelisation codes to be used in the uplink for DPCH
>>>Timeslot	M		Integer (0...14)	Timeslot of DPCH for each DPCH
>>>TFCI existence	O		Boolean	If the TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.
>>>Burst	O		Enumerated (Type1, Type2)	Short or long midamble for this timeslot. Default is burst type 1
>>>Midamble shift	O		Integer(0...maxMidamble Shift – 1)	Midamble shift for thistimeslot. Default is set by layer 1.

Condition	Explanation
Single	This IE is included if IE "Number of DPDCH" is "1"

Range Bound	Explanation
MaxDPDCHcount	Maximum number of DPDCHs
MaxCodesCount	Maximum number of codes for one timeslot
MaxTimeslotcount	Maximum number of timeslots used for DPCHs

10.2.6.44 Uplink DPCH power control info

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>DPCCH Power offset	M		Enumerated(-164, -162..-6)	In dB
>>Power Control Algorithm	M		Enumerated (algorithm 1 or algorithm 2)	Specifies algorithm to be used by UE to interpret TPC commands
>>TPC step size	C-algorithm1		Enumerated (1dB, 2dB)	
>TDD				
>>UL Maximum SIR	M		Enumerated (.1dB steps)	Maximum UE transmit power limit
>>UL target SIR	O			
>>UL Minimum SIR	O			

Condition	Explanation
C-algorithm1	This IE shall be present when the PC algorithm equals algorithm 1

10.2.7 Measurement Information elements

10.2.7.1 CFN-SFN observed time difference (FDD only)

The measured time difference to cell indicates the time difference that is measured by UE between CFN in the UE and the SFN of the target neighbouring cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages. This measurement is for FDD only

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CFN-SFN observed time difference	M		Enumerated(0..9830399)	Number of chip

10.2.7.2 Inter-frequency cell info

Contains the measurement object information for an inter-frequency measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Frequency info	M			
Cell individual offset	O		Enumerated(-10, -9.5..10)	Granularity 0.5 dB
Reference time difference to cell	O		Enumerated((-153088, 152576 ..153088)	In chip. This is –299 to 299 times 512 chip in steps of 512 chip
CHOICE *mode*				
>FDD				
>>Primary CPICH info	O			~~Not required if measuring RSSI only~~
>>Primary CPICH Tx power	O			Not required if measuring RSSI only
>TDD				
>Primary CCPCH info	M			
>Primary CCPCH TX power	O			
Cell Selection and Reselection Info	O			
>Qmin	O		Integer (-20..0)	Ec/N0, [dB] Default = same as in serving cell
>Maximum allowed UL TX power	O			[dBm] UE_TXPWR_MAX_RACH in 25.304. Default = same as in serving cell
>Qoffset$_{s,n}$ [dB]	O		Integer(-20, -19.5..20)	[dB] Default = 0 dB. Used in Alternative 1 in TS 25.304

10.2.7.3 Inter-frequency measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-frequency measurements.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Event ID	M			
Frequency info				
Choice mode				
>FDD				
>>Primary CPICH info	O			
>TDD				
>>Primary CCPCH info	O			

10.2.7.4 Inter-frequency measurement quantity

The quantity the UE shall measure in case of inter-frequency measurement. It also includes the filtering of the measurements.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>CHOICE *reporting criteria*				
>>>Intra-frequency measurement quantity	M		Enumerated(CPICH Ec/N0, CPICH RSCP, CPICH SIR, Pathloss, UTRA Carrier RSSI)	Pathloss=Primary CPICH Tx power-CPICH RSCP CPICH SIR is FFS
>>>Measurement quantity for frequency quality estimate	M		Enumerated(CPICH Ec/N0, CPICH RSCP)	
>TDD				
>>CHOICE *reporting criteria*				
>>>Intra-frequency measurement quantity	M		Enumerated(Primary CCPCH RSCP, Pathloss, UTRA carrier RSSI)	Pathloss=Primary CCPCH Tx power-Primary CCPCH RSCP
>>>Measurement quantity for frequency quality estimate			Enumerated(Primary CCPCH RSCP)	

CHOICE *reporting criteria*	**Condition under which the given *reporting criteria* is chosen**
Intra-frequency measurement quantity	Used when intra-frequency measurement reporting criteria is used for this measurement
Measurement quantity for frequency quality estimate	Used when inter-frequency measurement reporting criteria is used for this measurement

10.2.7.5 Inter-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an inter-frequency measurements. All events concerning inter-frequency measurements are labelled 2x where x is a,b,c..
Event 2a: Change of best frequency.
Event 2b: The estimated quality of the currently used frequency is below a certain threshold and the estimated quality of a non-used frequency is above a certain threshold.
Event 2c: The estimated quality of a non-used frequency is above a certain threshold
Event 2d: The estimated quality of the currently used frequency is below a certain threshold
Event 2e: The estimated quality of a non-used frequency is below a certain threshold
Event 2f: The estimated quality of the currently used frequency is above a certain threshold

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Parameters required for each event		0 to <maxEvent count>		
>Event ID	M		Enumerated (2a, 2b, 2c, 2d, 2e, 2f)	
>Treshold used frequency	C – clause 0			
>W used frequency	C – clause 0		Enumerated(0, 0.1..2.0)	Granularity 0.1
>Hysteresis	M		Enumerated(0, 0.5..14.5)	In event 2a, 2b, 2c, 2d, 2e, 2f Granularity 0.5 dB
>Time to trigger	M		Enumerated(0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000)	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms.
>Amount of reporting	M		Enumerated(1, 2, 4, 8, 16, 32, 64,	
>Reporting interval	M		Enumerated(0, 0.25, 0.5, 1, 2, 4, 8, 16)	Indicates the interval of periodical reporting when such reporting is triggered by an event. A zero value indicates that event triggered periodical reporting shall not be applied. Interval in seconds
>Parameters required for each non-used frequency		**0 to <maxNon usedfrequ ency>**		
>>Threshold non used frequency	C – clause 1			
>>W non-used frequency	**C-clause 1**		Enumerated(0, 0.1..2.0)	Granularity 0.1

Condition	Explanation
Clause 0	This parameter is only sent in event 2a,2b, 2d,, 2f
Clause 1	This parameter is only sent in event 2a, 2b, 2c, 2e

10.2.7.6 Inter-frequency reporting quantity

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SFN-SFN observed time difference	M		Boolean	Note 1
Cell Identity	M		Boolean	
UTRA Carrier RSSI	M		Boolean	
Frequency quality estimate	M		Boolean	
CHOICE *mode*				
>FDD				
>>CPICH Ec/N0	M		Boolean	
>>CPICH RSCP	M		Boolean	
>>Pathloss	M		Boolean	
>>CFN-SFN observed time difference	M		Boolean	Note 1
>TDD				
Primary CCPCH RSCP	M		Boolean	

NOTE 1: Feasibility of performing these measurements with compressed mode is unclear.

10.2.7.7 Inter-frequency SET UPDATE (FDD only)

Contains the changes of the active set associated with a non-used frequency. This information makes it possible to use events defined for Intra-frequency measurement within the same non-used frequency for Inter-frequency measurement reporting criteria. This information also controls if the UE should use autonomous updating of the active set associated with a non-used frequency.

Information Element/group name	Presence	Range	IE type and reference	Semantics description
UE autonomous update mode	M		Enumerated (On, On with no reporting, Off)	
Radio link addition information		0 to <MaxAddRLcount>		Radio link addition information required for each RL to add
>Primary CPICH info	C-Update			Note 1
Radio link removal information		0 to <MaxDelRLcount>		Radio link removal information required for each RL to remove
>Primary CPICH info	C-Update			Note 1

Condition	Explanation
Update	This IE is only present if IE"UE autonomous update mode" is set to "Off".

Range bound	Explanation
MaxAddRLcount	Maximum number of radio links which can be added
MaxDelRLcount	Maximum number of radio links which can be removed/deleted

NOTE 1: If it is assumed that CPICH downlink scrambling code is always allocated with sufficient reuse distances, CPICH downlink scrambling code will be enough for designating the different radio links.

10.2.7.8 Inter-system cell info

Contains the measurement object information for an inter-system measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *Radio Access Technology*				
>GSM				
>Qaccept$_{s,n}$	M		Integer (0..63)	Unit according to RXLEV, GSM TS 05.08
>Base transceiver Station Identity Code (BSIC)	M			GSM TS 03.03
>>Network Colour Code (NCC)	M		Integer (0..7)	
>>Base Station Colour Code (BCC)	M		Integer (0..7)	
>BCCH ARFCN	M		Integer (0..1023)	GSM TS 04.18
>>Output power	O			
>IS-2000				
>>System specific measurement info			enumerated (frequency, timeslot, colour code, output power, PN offset)	For IS-2000, use fields from TIA/EIA/IS-2000.5, Section 3. 7.3.3.2.27, *Candidate Frequency Neighbor List Message*

10.2.7.9 Inter-system measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-system measurements.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Event ID	M			
>>Frequency	M			
>>BSIC	M			

Condition	Explanation
GSM	This information element is only sent when the system being measured is a GSM system

10.2.7.10 Inter-system measurement quantity

The quantity the UE shall measure in case of inter-system measurement. It also includes the filtering of the measurements.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE mode				
>FDD				
>>Measurement quantity for UTRAN quality estimate	M		Enumerated(CPICH Ec/I0, CPICH RSCP)	
>TDD				
>>Measurement quantity for UTRAN quality estimate	M		Enumerated(Primary CCPCH RSCP)	
CHOICE *system*				
>GSM				
>>Measurement quantity	M		Enumerated(GSM Carrier RSSI, Pathloss)	
>>BSIC verification required	M		Boolean	Note 1
>IS2000				
>>TADD E_c/I_0	M		Integer(0..63)	Admission criteria for neighbours, see section 2.6.6.2.6 of TIA/EIA/IS-2000.5
>>TCOMP E_c/I_0	M		Integer(0..15)	Admission criteria for neighbours, see section 2.6.6.2.5.2 of TIA/EIA/IS-2000.5
>>SOFT SLOPE	O		Integer(0..63)	Admission criteria for neighbours, see section 2.6.6.2.3 and 2.6.6.2.5.2 of TIA/EIA/IS-2000.5
>>ADD_INTERCEPT	O		Integer(0..63)	Admission criteria for neighbours, see section 2.6.6.2.5.2 of TIA/EIA/IS-2000.5

NOTE 1 The possibility to use this IE is dependant on comments from SMG2.

Also, this IE must be set to "true" if IE "Observed time difference to GSM cell" in IE "Inter-system ~~measurement~~ reporting quantity "is set to "true".

CHOICE *system*	Condition under which the given *system* is chosen
GSM	Used when the system being measured is a GSM system

10.2.7.11 Inter-system measurement reporting criteria

The triggering of the event-triggered reporting for an inter-system measurement. All events concerning inter-system measurements are labelled 3x where x is a,b,c..
Event 3a: The estimated quality of the currently used UTRAN frequency is below a certain threshold and the estimated quality of the other system is above a certain threshold.
Event 3b: The estimated quality of other system is below a certain threshold
Event 3c: The estimated quality of other system is above a certain threshold
Event 3d: Change of best cell in other system

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Parameters required for each event		0 to <maxEvent count>		
>Event ID	M		Enumerated (3a, 3b, 3c, 3d)	
>Treshold own system	C – clause 0			
>W	C – clause 0			In event 3a
>Threshold other system	C – clause 1			In event 3a, 3b, 3c
>Hysteresis	M			
>Time to trigger	M			Indicates the period of time between the timing of event detection and the timing of sending Measurement Report.
>Amount of reporting	M			
>Reporting interval	M			Indicates the interval of periodical reporting when such reporting is triggered by an event. A zero value indicates that event triggered periodical reporting shall not be applied.

Condition	Explanation
Clause 0	This parameter is only sent in event 3a
Clause 1	This parameter is only sent in event 3a, 3b and 3c

10.2.7.12 Inter-system reporting quantity

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UTRAN estimated quality	M		Boolean	
CHOICE *system*				
>GSM				
>>Pathloss	M		Boolean	
>>Observed time difference to GSM cell	M		Boolean	
>>GSM Carrier RSSI	M		Boolean	
>>BSIC	M		Boolean	

CHOICE *system*	Condition under which the given *system* is chosen
GSM	Used when the system being measured is a GSM system

10.2.7.13 Intra-frequency cell info

Contains the measurement object information for an intra-frequency measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell individual offset	O		Enumerated(-10, -9.5..10)	Granularity 0.5 dB
Reference time difference to cell	O			
CHOICE *mode*				
>FDD				
>>Primary CPICH info	M			
>>Primary CPICH Tx power	O			
>>SFN Measurement Indicator	M		Boolean	
>>STTD Indicator	M		Boolean	
>TDD				
>>Primary CCPCH info	M			
>>Primary CCPCH Tx power	O			
>>DL CCTrCH info	O			List of TFCS ID's to measure
>>DL Timeslot info	O			List of timeslots to measure
Cell Selection and Reselection parameters	O			
>Qmin	O		Integer (-20..0)	Ec/N0 or SIR, [dB]. Note 1. Default = same as in serving cell
>Maximum allowed UL TX power	O			[dBm] UE_TXPWR_MAX_RACH in 25.304. Default = same as in serving cell
>$Qoffset_{s,n}$ [dB]	O		Integer(-20, -19.5..20)	[dB] Default = 0 dB. Used in Alternative 1 in TS 25.304

10.2.7.14 Intra-frequency measurement event results

This IE contains the measurement event results that are reported to UTRAN for intra-frequency measurements.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Event ID	M			
CHOICE *mode*				
>FDD				
>>Primary CPICH info	O			
>TDD				
>>Primary CCPCH info	O			

10.2.7.15 Intra-frequency measurement quantity

The quantity the UE shall measure in case of intra-frequency measurement. It also includes the filtering of the measurements.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>Measurement quantity	M		Enumerated(CPICH Ec/N0, CPICH RSCP, CPICH SIR, Pathloss)	Pathloss=Primary CPICH Tx power-CPICH RSCP Note 1
>TDD				
>>Measurement quantity	M		Enumerated(Primary CCPCH RSCP, Pathloss, Timeslot ISCP)	Pathloss=Primary CCPCH Tx power-Primary CCPCH RSCP

NOTE: If CPICH SIR can be used has not been concluded in WG4

10.2.7.16 Intra-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an intra-frequency measurement. All events concerning intra-frequency measurements are labelled 1x where x is a, b, c....
Event 1a: A Primary CPICH enters the Reporting Range (FDD only)
Event 1b: A Primary CPICH leaves the Reporting Range (FDD only)
Event 1c: A Non-active Primary CPICH becomes better than an active Primary CPICH (FDD only)
Event 1d: Change of best cell [Note 1] (FDD only)
Event 1e: A Primary CPICH becomes better than an absolute threshold (FDD only)
Event 1f: A Primary CPICH becomes worse than an absolute threshold (FDD only)
Event 1g: Change of best cell in TDD
Event 1h: DL CCTrCH below a certain threshold (TDD only)
Event 1i: Timeslot ISCP below a certain threshold (TDD only)
Event 1j: Timeslot ISCP above a certain threshold (TDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Parameters required for each event		0 to <maxEvent count>		
>Event ID	M		Enumerated (1a,1b,1c,1d, 1e,1f,1g,1h,1 I,1j)	
>Triggering condition	C - clause 0		enumerated(Active set cells, Monitored set cells, Active set cells and monitored set cells)	Indicates which cells that can trigger the event
>Reporting Range	C - clause 1		Enumerated(0, 0.5..14.5)	In event 1a,1b. Granularity 0.5 dB
>Cells forbidden to affect Reporting range	C – clause 1	0 to <maxCells Forbidden>		In event 1a,1b
>>CHOICE *mode*				
>>>FDD				
>>>>Primary CPICH info	M			
>>>TDD				
>>>>Primary CCPCH info	M			
>W	C – clause 1		Enumerated(0, 0.1..2.0)	Granularity 0.1
>Hysteresis	C & O - clause 2		Enumerated(0, 0.5..7.5)	In event 1a, 1b, 1c,1d, 1g, 1h, 1i or 1j. Granularity 0.5 dB
>Reporting deactivation >threshold	C - clause 3		Enumerated(0..7)	In event 1a Indicates the maximum number of cells allowed in the active set in order for event 1a to occur. Value 0 indicates "not applicable".
>Replacement activation threshold	C - clause 4		Enumerated(0..7)	In event 1c Indicates the minimum number of cells allowed in the active set in order for event

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
				1c to occur. Value 0 indicates "not applicable".
>Time to trigger	M		Enumerated(0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000)	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>Amount of reporting	M		Enumerated(1, 2, 4, 8, 16, 32, 64, Infinity)	Measurement is "released" after the indicated amount of reporting from the UE itself.
>Reporting interval	M		Enumerated(0, 0.25, 0.5, 1, 2, 4, 8, 16)	Indicates the interval of periodical reporting when such reporting is triggered by an event. A zero value indicates that event triggered periodical reporting shall not be applied. Interval in seconds

Condition	Explanation
Clause 0	This parameter is only sent in event 1a,1b, 1e, 1f
Clause 1	This parameter is only sent in event 1a,1b
Clause 2	This parameter is only sent in event 1a,1b, 1c,1d, 1g, 1h, 1i, 1j
Clause 3	This parameter is only sent in event 1a
Clause 4	This parameter is only sent in event 1c

Range Bound	Explanation
MaxCellsForbidden	Maximum number of cells that can be forbidden to affect reporting range

NOTE 1: When best PCCPCH in active set changes, all active cells are reported.

10.2.7.17 Intra-frequency reporting quantity

Contains the reporting quantity information for an intra-frequency measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
For active set cells				
>SFN-SFN observed time difference	M		Enumerated(No report, type 1, type 2)	
>Cell Identity	M		Boolean	
CHOICE *mode*				
>>FDD				
>>>CPICH Ec/N0	M		Boolean	
>>>CPICH RSCP	M		Boolean	
>>>CPICH SIR	M		Boolean	Note 1
>>>Pathloss	M		Boolean	
>>>CFN-SFN observed time difference	M		Boolean	
>>TDD				
>>>DL CCTrCH SIR	M		Boolean	
Timeslot ISCP	M		Boolean	
Primary CCPCH RSCP	M		Boolean	
>>>Pathloss	M		Boolean	
For monitored set cells				
>SFN-SFN observed time difference	M		Enumerated(No report, type 1, type 2)	
>Cell Identity	M		Boolean	
>CHOICE *mode*				
>>FDD				
>>>CPICH Ec/N0	M		Boolean	
>>>CPICH RSCP	M		Boolean	
>>>CPICH SIR	M		Boolean	Note 1
>>>Pathloss	M		Boolean	
>>>CFN-SFN observed time difference	M		Boolean	
>>TDD				
>>>DL CCTrCH SIR	M		Boolean	
>>>Timeslot ISCP	M		Boolean	
>>>Primary CCPCH RSCP	M		Boolean	
>>>Pathloss	M		Boolean	

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.2.7.18 Intra-frequency reporting quantity for RACH reporting

Contains the reporting quantity information for an intra-frequency measurement report, which is sent on the RACH.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SFN-SFN observed time difference	M		Enumerated(No report, type 1, type 2)	
CHOICE *mode*				
>FDD				
>>CHOICE quantity				
>>>CPICH Ec/N0	M		~~NULL~~Boolean	
>>>CPICH RSCP	M		Boolean~~NULL~~	
>>>CPICH SIR	M		Boolean~~NULL~~	Note 1
>>>Pathloss	M		Boolean~~NULL~~	
>TDD				
>>Timeslot ISCP				
>>Primary CCPCH RSCP				

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.2.7.19 Maximum number of reported cells on RACH

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Number of reported cells	M		Enumerated (no report, current cell, current cell + best neighbour, current cell+2 best neighbours, …, current cell+6 best neighbours)	

10.2.7.20 Measured results

Contains the measured results of the quantity indicated optionally by Reporting Quantity in Measurement Control. "Measured results" can be used for both event trigger mode and periodical reporting mode.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Intra-frequency measurement results		0 to <maxIntraCells>		
Cell Identity	O			
SFN-SFN observed time difference	O			
CHOICE *mode*				
>FDD				
>>Primary CPICH info	M			
>>CPICH Ec/N0	O		Enumerated(-20..0)	In dB
>>CPICH RSCP	O		Enumerated(-115..-40)	In dBm
>>CPICH SIR	O		Enumerated(-10..20)	In dB Note 1
>>Pathloss	O		Enumerated(46..158)	In dB
>>CFN-SFN observed time difference	O			
>TDD				
>>Primary CCPCH info	M			
>>Primary CCPCH RSCP	O			
>>DL CCTrCH SIR		0 to <maxCCTrCHcount>		SIR measurements for each DL CCTrCH
>>>Timeslot		0 to <maxTSperCCTrCHcount		All timeslots on which the CCTrCH is mapped on
>>>>ISCP	O			
>>>>RSCP	O			
>>DL Timeslot ISCP		0 to <maxTStoMEASURE count>		ISCP measurements for each timeslot indicated by the UTRAN
>>>ISCP	O			
Inter-frequency measurement results		0 to <maxNumFreq>		
>UTRA carrier	M			
>UTRA carrier RSSI	O		Enumerated(-95..-30)	In dBm
>Inter-frequency cell measurement results		0 to <maxInterCells>		
>>Cell Identity	O			
>>SFN-SFN observed time difference	O			
>>CHOICE *mode*				
>>>FDD				
>>>>Primary CPICH info	M			
>>>>CPICH Ec/N0	O		Enumerated(-20..0)	In dB
>>>>CPICH RSCP	O		Enumerated(	In dBm

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			-115..-40)	
>>>>Pathloss	O		Enumerated(46..158)	In dB
>>>>CFN-SFN observed time difference	O			
>>>TDD				
>>>>Primary CCPCH info	M			
>>>>Primary CCPCH RSCP	O			
Inter-system measurement results		0 to <maxInterSys>		
CHOICE *system*				
>GSM				
>>Frequency	M			
>>GSM carrier RSSI	O		Enumerated(0..63)	RXLEV GSM TS 05.08
>>Pathloss	O		Enumerated(46..158)	In dB
>>BSIC	O		Bitstring(6)	GSM TS 03.03
>>Observed time difference to GSM cell	O		Enumerated(0..4095*306 0/(4096*13)	In steps of 3060/(4096*13) ms
Traffic volume measurement results		0 to <MaxTraf>		
>RB Identity	M			
RLC buffers payload	O		Enumerated(0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K, 32K, 64K, 128K, 256K, 512K, 1024K)	In bytes And Kbytes = N*1024 bytes
>Average RLC buffer payload	O		Enumerated(0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K, 32K, 64K, 128K, 256K, 512K, 1024K)	In bytes And Kbytes = N*1024 bytes
>Variance of RLC buffer payload	O		Enumerated(0, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2K, 4K, 8K, 16K)	In bytes And Kbytes = N*1024 bytes
Quality measurement results				
BLER measurement results		0 to <MaxBLER>		
>Transport channel identity	M			
>DL Transport Channel BLER	O		Enumerated(0, 0.02 ..5.10)	dB%=-Log10(Transport channel BLER) Granularity 0.02
DL Physical Channel BER	O		Enumerated(	dB%=-Log10(Physical channel

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
			0, 0.02 ..5.10)	BER) Granularity 0,02
SIR	O		Enumerated(-10..20)	In dB
UE Internal measurement results				
UE Position	O			
CHOICE *mode*				
>FDD				
>>UE Transmitted Power	O		Enumerated(-50..33)	UE transmitted power In dBm
>TDD				
UE transmitted Power	O	0 to <maxUsed UplTScount >		UE transmitted power for each used timeslot (TDD)

Range Bound	Explanation
MaxCCTrCHcount	Maximum number of DL CCTrCH allocated to an UE
MaxTSperCCTrCHcount	Maximum number of TS on which a single DL CCTrCH is mapped on
maxTStoMEASUREcount	Maximum number of TS on which the UE has to measure
maxUsedUplTScount	Maximum number of TS used for UL transmissions
MaxIntraCells	Maximum number of Intra-frequency cells that can be included in a measurement report
MaxNumFreq	Maximum number of frequencies with intra-frequency cells that can be included in a measurement report
MaxInterCells	Maximum number of Inter-frequency cells for one frequency that can be included in a measurement report
MaxInterSys	Maximum number of Inter-system cells that can be included in a measurement report
MaxTraf	Maximum number of radio bearers with traffic volume measurements that can be included in a measurement report
MaxBLER	Maximum number of transport channels with BLER measurements that can be included in a measurement report

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.2.7.21 Measurement Command

Information Element	Presence	Range	IE type and reference	Semantics description
Measurement command	M		Enumerated(Setup,Modify ,Release)	

10.2.7.22 Measurement Identity Number

A reference number that is used by the UTRAN at modification and release of the measurement, and by the UE in the measurement report.

10.2.7.23 Measurement reporting mode

Contains the type of Measurement Report transfer mode and the indication of periodical/event trigger.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Measurement Report Transfer Mode	M		enumerated (Acknowledged mode RLC, Unacknowledged mode RLC)	
Periodical Reporting / Event Trigger Reporting Mode	M		enumerated (Periodical reporting, Event trigger)	

NOTE 1: The work in order to support the CPICH Rx SIR measurement is in progress in RAN WG4 and may impact the use of that measurement in this document

10.2.7.24 Measuredment results on RACH

Information Element/group name	Presence	Range	IE type and reference	Semantics description
Measurement result for current cell				
CHOICE *mode*				
>FDD				
>>CHOICE measurement quantity				
>>>CPICH Ec/N0			Enumerated(-20..0)	In dB
>>>CPICH RSCP			Enumerated(-115..-40)	In dBm
>>>CPICH SIR			Enumerated(-10..20)	In dB Note 1
>>>Pathloss			Enumerated(46..158)	In dB
>TDD				
>>Timeslot ISCP				
>>Primary CCPCH RSCP				
Measurement results for neighbouring cells		0 to 6		
>SFN-SFN observed time difference	O			
>CHOICE *mode*				
>>FDD				
>>>Primary CPICH info	M			
>>>CHOICE measurement quantity				
>>>>CPICH Ec/N0			Enumerated(-20..0)	In dB
>>>>CPICH RSCP			Enumerated(-115..-40)	In dBm
>>>>CPICH SIR			Enumerated(-10..20)	In dB Note 1
>>>>Pathloss			Enumerated(46..158)	In dB
>>TDD				
>>>Primary CCPCH info	M			
>>>Primary CCPCH RSCP				

NOTE 1: If CPICH SIR can be used has not been concluded in WG4

10.2.7.25 Measurement Type

Information Element	Presence	Range	IE type and reference	Semantics description
Measurement Type	M		Enumerated(Intra-frequency, Inter-frequency, Inter-system, Traffic volume, Quality, UE internal)	

10.2.7.26 Measurement validity

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Resume/release	M		Enumerated('resume', 'release')	Indicates whether a given measurement identifier should be released after transitions to CELL_DCH and/or transitions from CELL_DCH state.
UE state	C – if Resume		Enumerated('CELL_DCH' , 'all states except CELL_DCH', 'all states')	Indicates the states, in which measurement reporting shall be conducted. The values 'all states except CELL_DCH' and 'all states' are used for measurement type 'traffic volume reporting'.

Condition	Explanation
Resume	If "Resume/Release" = Resume

10.2.7.27 Observed time difference to GSM cell

NOTE: Only the section is made.

10.2.7.28 Periodical reporting criteria

Contains the periodical reporting criteria information. It is necessary only in the periodical reporting mode.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Amount of reporting	O		Enumerated(1, 2, 4, 8, 16, 32, 64, Infinity)	Measurement is "released" after the indicated amount of reporting from the UE itself
Reporting interval	O		Enumerated(0, 0.25, 0.5, 1, 2, 3, 4, 6, 8, 12, 16, 20, 24, 28, 32, 64)	Indicates the interval of periodical report. Interval in seconds

10.2.7.29 Quality measurement event results (FFS)

NOTE: Only the section is made.

10.2.7.30 Quality measurement object (FFS)

NOTE: Only the section is made.

10.2.7.31 Quality measurement quantity (FFS)

NOTE: Only the section is made.

10.2.7.32 Quality measurement reporting criteria (FFS)

NOTE: Only the section is made.

10.2.7.33 Quality reporting quantity

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
DL Transport Channel BLER for each transport channel	M		Boolean	
DL Physical channel BER	M		Boolean	
SIR	M		Boolean	

10.2.7.34 Reference time difference to cell

The reference time difference to cell indicates the time difference between the primary CCPCH of the current cell and the primary CCPCH of a neighbouring cell. It is notified to UE by System Information or Measurement Control message.
In case of macro-diversity the reference is the primary CCPCH of one the cells used in the active set.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *accuracy*				
>40 chips				
>>Reference time difference	M		Enumerated(0..40..38400)	
>256 chips				
>>Reference time difference	M		Enumerated(0..256..38400)	
>2560 chips				
>>Reference time difference	M		Enumerated(0..2560..3840 0)	

NOTE: Exactly how the reference cell is pointed out in this case in the messages is FFS.

10.2.7.35 SFN Measurement Indicator

Indicates whether the UE should read cell SFN of the target neighbour cell or not.

10.2.7.36 SFN-SFN observed time difference

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *type*				
>Type 1			Enumerated(0..983 0399)	Number of chip
>Type 2			Enumerated(-1279, -1278.5..1280)	Number of chip Granularity of 0.5 chip

10.2.7.37 Traffic volume measurement event results

Contains the event result for a traffic volume measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Transport Channel ID	M		Enumerated(1..64)	
Event type	O		Enumerated(Overflow, Underflow)	

10.2.7.38 Traffic volume measurement object

Contains the measurement object information for a traffic volume measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Target Transport Channel ID	M	1 to <MaxTrCH count>	Enumerated(1..64)	

Multi bound	Explanation
MaxTrCHcount	Maximum number of target Transport channels to be measured

10.2.7.39 Traffic volume measurement quantity

Contains the measurement quantity information for a traffic volume measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Measurement quantity	M		Enumerated(RLC buffer payload, Average RLC buffer payload, Variance of RLC buffer payload)	

10.2.7.40 Traffic volume measurement reporting criteria

Contains the measurement reporting criteria information for a traffic volume measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Parameters sent for each transport channel		1 to <maxTrCH count>		
>Transport Channel ID	M		Enumerated(1..64)	
>Upper Threshold	M		Enumerated(8,16,32,64,128,256,512,1024,1536,2048,3072,4096,6144,8192)	Threshold in bytes
>Lower Threshold	O		Enumerated(8,16,32,64,128,256,512,1024,1536,2048,3072,4096,6144,8192)	Threshold in bytes
Time to trigger	M		Enumerated(0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000)	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
Pending time after trigger	M		Enumerated(0.25, 0.5, 1, 2, 4, 8, 16)	Indicates the period of time during which it is forbidden to send any new measurement reports with the same measurement ID even if the triggering condition is fulfilled again. Time in seconds
Tx interruption after trigger	M		Enumerated(0.25, 0.5, 1, 2, 4, 8, 16)	Indicates whether or not the UE shall block DTCH transmissions on the RACH after a measurement report is triggered. Time in seconds
Amount of reporting	M		Enumerated(1, 2, 4, 8, 16, 32, 64, Infinity)	Measurement is "released" after the indicated amount of reporting from the UE itself.
Reporting interval	M		Enumerated(0, 0.25, 0.5, 1, 2, 4, 8, 16)	Indicates the interval of periodical report during the event is in the detected state. Interval in seconds.

Range Bound	Explanation
MaxTrCHcount	Maximum number of transport channels = 64

10.2.7.41 Traffic volume reporting quantity

Contains the reporting quantity information for a traffic volume measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
RLC buffer payload for each RB	M		Boolean	
Average RLC buffer payload for each RAB	M		Boolean	
Variance of RLC buffer payload for each RAB	M		Boolean	

10.2.7.42 UE internal measurement quantity

The quantity the UE shall measure in case of UE internal measurement.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Measurement quantity	M		Enumerated(UE Transmitted Power, UTRA Carrier RSSI)	

10.2.7.43 UE internal measurement reporting criteria

The triggering of the event-triggered reporting for a UE internal measurement. All events concerning UE internal measurements are labelled 6x where x is a, b, c....
In TDD, the events 6a - 6d are measured and reported on timeslot basis.
Event 6a: The UE Transmitted Power becomes larger than an absolute threshold
Event 6b: The UE Transmitted Power becomes less than an absolute threshold
Event 6c: The UE Transmitted Power reaches its minimum value
Event 6d: The UE Transmitted Power reaches its maximum value
Event 6e: The UE RSSI reaches the UE's dynamic receiver range

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Parameters sent for each UE internal measurement event		1 to <maxEvent count>		
>Event ID	M		Enumerated(6a,6b,6c,6d, 6e)	
>Time-to-trigger	M		Enumerated(0, 10, 20, 40, 60, 80, 100, 120, 160, 200, 240, 320, 640, 1280, 2560, 5000)	Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. Time in ms
>UE Transmitted power Tx power threshold	C - clause 1		Enumerated(-50..33)	In event 6a, 6b. Power in dBm

Condition	Explanation
Clause 1	This parameter is only sent in event 6a,6b

10.2.7.44 UE Internal reporting quantity

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
UE Transmitted Power	M		Boolean	
UE Position	M		Boolean	

10.2.8 Other Information elements

10.2.8.1 BCCH modification info

Indicates modification of the System Information on BCCH.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
MIB Value tag	M		~~Value tag~~	
BCCH Modification time	O		Integer (0, 2, 4, .. 4094)	All even SFN values are allowed.

10.2.8.2 Cell Value tag

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Cell Value tag	M		Enumerated (1..4)	

10.2.8.3 Inter-system message

This Information Element contains one or several messages that are structured and coded according to the specification used for the system type indicated by the first parameter.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
System type	M		Enumerated (GSM,1..15)	
Message(s)	M	1..<maxInterSysMessages>	Bitstring (1..512)	Formatted and coded according to specification for the indicated system type. See Note 1

Range Bound	Explanation
MaxInterSysMessages(=4)	Maximum number of Inter System Messages to send

NOTE 1: For inter-system handovers to IS 2000 system, this field shall consist of the Universal Handoff Direction message, described in Section 3.7.3.3.2.36 of TIA/EIA IS-2000.5

10.2.8.4 MIB Value tag

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
MIB Value tag	M		Enumerated (1..8)	

10.2.8.5 PLMN Value tag

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
PLMN Value tag	M		Enumerated (1..256)	

10.2.8.6 Scheduling information

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SIB type	M			
PLMN Value tag	C - Blocktype			
Cell Value tag	C - Blocktype			
Scheduling	O			
>SEG_COUNT	O		SEG_COUNT	
>SIB_REP	M		Enumerated (4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048)	Repetition period for the SIB in frames
>SIB_POS	M		Enumerated (0, 2, 4, 6, ..Rep-2)	Position of the first segment
>SIB_POS offset info	O			
>>SIB_OFF	M	Segcount-1	Enumerated (2, 4, 6, ..32)	Offset of subsequent segments

Condition	Explanation
Blocktype	The presence of this IE depends on the value of the preceding SIB type. This IE is mandatory if the specification of the SIB of that SIB type includes as first IE the corresponding Value tag IE.

Option	Default value
SIB_POS offset info	If the SIB_POS offset info is not present, the receiver shall understand that all segments are consecutive, i.e., that the SIB_OFF would have been ~~0, 1, 2, ...~~2
SEG_COUNT	If not present, the number of segments is one.
Scheduling	If not present, the SIB is not sent in the area scope.

Range Bound	Explanation
Segcount	The value of the SEG_COUNT IE
Rep	The value of the SIB_REP IE

10.2.8.7 SEG COUNT

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SEG_COUNT	M		Integer (1..16)	Number of segments in the system information block

10.2.8.8 Segment index

Each system information segment has an individual segment index.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Segment index	M		Integer (0..15)	Segments of a system information block are numbered starting with 0 for the first part.

10.2.8.9 Segment type

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Segment type	M		Enumerated (First segment, Subsequent segment, Last segment, Complete)	

10.2.8.10 SIB data

Contains the result of the IE 'SIB Content' after segmentation.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SIB data	M		Bit string (1..MaxLength)	

Range Bound	Explanation
MaxLength	Maximum length of a BCH- or FACH transport block used for broadcast of system information.

10.2.8.11 SIB type

The SIB type identifies a specific system information block.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SIB type	M		Enumerated	

The list of values to encode is:

Master information block,

System Information Type 1,

System Information Type 2,

System Information Type 3,

System Information Type 4,

System Information Type 5,

System Information Type 6,

System Information Type 7

System Information Type 8,

System Information Type 9,

System Information Type 10,

System Information Type 11,

System Information Type 12

10.2.8.12 SI Padding

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Padding	M		Bit string (1..MaxLength)	

All the bits of the 'SI Padding' IE shall be set to a fixed value in emission. However, it is not an error for the receiver to receive any other value for those bits.

Range Bound	Explanation
MaxLength	Maximum length of a BCH- or FACH transport block used for broadcast of system information.

10.2.9 ANSI-41 Information elements

10.2.9.1 ANSI-41 Global Service Redirection information

This Information Element contains ANSI-41 Global Service Redirection information.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
ANSI-41 Global Service Redirection information	M		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.2.9.2 ANSI-41 NAS system information

This Information Element contains ANSI-41 system information.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
NAS (ANSI-41) system information	M		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.2.9.3 ANSI-41 Private Neighbor List information

This Information Element contains ANSI-41 Private Neighbor List information.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
ANSI-41 Private Neighbor List information	M		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.2.9.4 ANSI-41 RAND information

This Information Element contains ANSI-41 RAND information.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
ANSI-41 RAND information	M		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.2.9.5 ANSI-41 User Zone Identification information

This Information Element contains ANSI-41 User Zone Identification information.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
ANSI-41 User Zone Identification information	M		Bit string (size (1..MaxLength))	Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41"

10.2.9.6 MIN_P_REV

This Information Element contains minimum protocol revision level.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
MIN_P_REV	M			Minimum protocol revision level

10.2.9.7 NID

This Information Element contains Network identification.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
NID	M			Network identification

10.2.9.8 P_REV

This Information Element contains protocol revision level

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
P_REV	M			Protocol revision level

10.2.9.9 SID

This Information Element contains System identification

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
SID	M			System identification

13 Protocol timers, counters and other parameters

13.1 Timers for UE

Timer	Value Range ~~(seconds)~~	Relations	Start	Stop	At expiry
T300	1...8 sec		Transmission of RRC CONNECTION REQUEST	Reception of RRC CONNECTION SETUP	Retransmit RRC CONNECTION REQUEST if V300 =< N300, else go to Idle mode
T301	1...8 sec		Transmission of RRC CONNECTION REESTABLISHMENT REQUEST	Reception of RRC CONNECTION REESTABLISHMENT	Retransmit RRC CONNECTION REESTABLISH REQUEST if V301 =< N301, else go to Idle mode
T302	1...8 sec		Transmission of CELL UPDATE	Reception of CELL UPDATE CONFIRM	Retransmit CELL UPDATE if V302 =< N302, else, go to Idle mode
T303	1...8 sec		Transmission of URA UPDATE	Reception of URA UPDATE CONFIRM	Retransmit URA UPDATE if V303 =< N303, else go to Idle mode
T304	200, 400...2000 ms		Transmission of UE CAPABILITY INFORMATION	Reception of UE CAPABILITY INFORMATION CONFIRM	Retransmit UE CAPABILITY INFORMATION if V304 =< N304, else initiate RRC connection reestablishment
T305	No updating,1, 2,….1023 sec		Entering CELL_FACH or CELL_PCH state. Reception of CELL UDPATE CONFIRM.	Entering another state.	Transmit CELL UPDATE if T307 is not activated.
T306	No updating,1, 2,….1023 sec		Entering URA_PCH state. Reception of URA UDPATE CONFIRM.	Entering another state.	Transmit URA UPDATE if T307 is not activated.
T307	5, 10,...50 sec		When the timer T305 or T306 has expired and the UE detects "out of service area".	When the UE detects "in service area". Or, initiate cell update or URA update procedure depending on state	Transit to idle mode
T308	40, 80...300 ms		Transmission of RRC CONNECTION RELEASE COMPLETE	Not stopped	Transmit RRC CONNECTION RELEASE COMPLETE if V308 =< N308, else go to idle mode.

Timer	Value Range ~~(seconds)~~	Relations	Start	Stop	At expiry
T309	1...8 sec		Upon reselection of a cell belonging to another radio access system from connected mode	Successful establishment of a connection in the new cell	Resume the connection to UTRAN
T310			Transmission of PUSCH CAPACITY REQUEST	Reception of PHYSICAL SHARED CHANNEL ALLOCATION	Transmit PUSCH CAPACITY REQUEST if V310 =< N310, else procedure stops.
T311			Reception of PHYSICAL SHARED CHANNEL ALLOCATION message with the parameter "PUSCH Allocation Pending" set to "pending".	Reception of PHYSICAL SHARED CHANNEL ALLOCATION message with parameter "PUSCH Allocation Pending" set to "not pending".	UE may initiate a PUSCH capacity request procedure.
T312	~~Integer (~~1..16~~)~~ sec		When the UE starts to establish dedicated CH	When the UE detects consecutive N312 "in sync" indication from L1.	The criteria for physical channel establishment failure is fulfilled
T313	~~Integer (~~1..16~~)~~sec		When the UE detects consecutive N313 "out of sync" indication from L1.	When the UE detects consecutive N315 "in sync" indication from L1.	The criteria for Radio Link failure is fulfilled
T314	~~Integer (~~0..4095~~)~~sec		When the UE detects that it is out of sync.	When the UE detects suitable cell and RRC Connection Re-establishment Request message is sent.	Transit to idle mode

13.2 Counters for UE

Counter	Reset	Incremented	When reaching max value
V300	When initiating the procedure RRC connection establishment	Upon expiry of T300.	When V300 > N300, the UE enters idle mode.
V301	When initiating the procedure RRC connection reestablishment	Upon expiry of T301.	When V301 > N301, the UE enters idle mode.
V302	When initiating the procedure Cell update	Upon expiry of T302	When V302 > N302 the UE enters idle mode.
V303	When initiating the procedure URA update	Upon expiry of T303	When V302 > N303 the UE enters idle mode.
V304	When sending the first UE CAPABILITY INFORMATION message.	Upon expiry of T304	When V304 > N304 the UE initiates the RRC connection re-establishment procedure

Counter	Reset	Decremented	When reaching zero
V308	When sending the first RRC CONNECTION RELEASE COMPLETE message in a RRC connection release procedure.	Upon expiry of T308	When V308 =0 the UE stops re-transmitting the RRC CONNECTION RELEASE COMPLETE message.

Counter	Reset	Incremented	When reaching max value
V310	When sending the first PUSCH CAPACITY REQUEST message in a PUSCH capacity request procedure	Upon expiry of T310	When V310 > N310 the UE stops re-transmitting the PUSCH CAPACITY REQUEST message.

13.3 UE constants and parameters

Constant	Value	Usage
N300	1...8	Maximum number of retransmissions of the RRC CONNECTION REQUEST message
N301	1...8	Maximum number of retransmissions of the RRC CONNECTION REESTABLISHMENT REQUEST message
N302	1...8	Maximum number of retransmissions of the CELL UPDATE message
N303	1...8	Maximum number of retransmissions of the URA UPDATE message
N304	1...8	Maximum number of retransmissions of the UE CAPABILITY INFORMATION message
N310		Maximum number of retransmission of the PUSCH CAPACITY REQUEST message
N312	~~Integer (~~1..1024~~)~~	Maximum number of successive "in sync" received from L1.
N313	~~Integer (~~1..1024~~)~~	Maximum number of successive "out of sync" received from L1.
N315	~~Integer (~~1..1024~~)~~	Maximum number of successive "in sync" received from L1 during T313 is activated.

14 Specific functions

14.10 Provision and reception of RRC Initialisation Information between RNCs

When relocation of SRNS is decided to be executed, the RRC shall build the state information, which contains the RRC, RLC and MAC related RRC message information elements, which currently specify the state of the RRC. This RRC INITIALISATION INFORMATION shall be sent by the source RNC to the target RNC to enable transparent relocation of the RRC and lower layer protocols. Correspondingly, the RRC in the target RNC shall receive the RRC INITIALISATION INFORMATION and update its state parameters accordingly to facilitate a transparent relocation of SRNS for the UE.

14.10.1 RRC Initialisation Information

Information Element	Presence	Multi	IE type and reference	Semantics description
Non RRC IEs				
State of RRC	M		Enumerated (CELL_DCH, CELL_FACH,CELL_PCH, URA_PCH)	
State of RRC procedure	M		Enumerated (await no RRC message, await RRC Connection Re-establishment Complete, await RB Setup Complete, await RB Reconfiguration Complete, await RB Release Complete, await Transport CH Reconfiguration Complete, await Physical CH Reconfiguration Complete, await Active Set Update Complete, await Handover Complete, others)	
Variable RLC parameters	M			
Security related Variable parameters	M			
Implementation specific parameters	O		Bitstring (1..512)	
RRC IEs				
UE Information elements				
U-RNTI				
C-RNTI				
UE radio Capability				
Ciphering mode info				
Other Information elements				
Inter System message (inter system classmark)				
UTRAN Mobility Information elements				
URA Identifier				
CN Information Elements				
CN Domain Identity				
NAS System Info				
Measurement Related Information elements				
For each ongoing measurement reporting				
Measurement Identity Number				
Measurement Command				
Measurement Type				
Measurement Reporting Mode				
Additional Measurement Identity number				
CHOICE Measurement				
Intra-frequency				
Intra-frequency cell info				

Information Element	Presence	Multi	IE type and reference	Semantics description
Intra-frequency measurement quantity				
Intra-frequency ~~measurement~~ reporting quantity				
Maximum number of reporting cells				
Measurement validity				
CHOICE report criteria				
Intra-frequency measurement reporting criteria				
Periodical reporting				
No reporting				
Inter-frequency				
Inter-frequency cell info				
Inter-frequency measurement quantity				
Inter-frequency ~~measurement~~ reporting quantity				
Maximum number of reporting cells				
Measurement validity				
CHOICE report criteria				
Inter-frequency measurement reporting criteria				
Periodical reporting				
No reporting				
Inter-system				
Inter-system cell info				
Inter-system measurement quantity				
Inter-system ~~measurement~~ reporting quantity				
Maximum number of reporting cells				
Measurement validity				
CHOICE report criteria				
Inter-system measurement reporting criteria				
Periodical reporting				
No reporting				
Traffic Volume				
Traffic volume measurement Object				
Traffic volume measurement quantity				
Traffic volume ~~measurement~~ reporting quantity				
CHOICE report criteria				
Traffic volume measurement reporting criteria				
Periodical reporting				
No reporting				
Quality				
Quality measurement Object				
Quality measurement quantity				

Information Element	Presence	Multi	IE type and reference	Semantics description
Quality ~~measurement~~ reporting quantity				
CHOICE report criteria				
Quality measurement reporting criteria				
Periodical reporting				
No reporting				
UE internal				
UE internal measurement quantity				
UE internal ~~measurement~~ reporting quantity				
CHOICE report criteria				
UE internal measurement reporting criteria				
Periodical reporting				
No reporting				
Radio Bearer Information Elements				
For each Radio Bearer				
RB Identity				
RLC Info				
RB mapping info				
Transport Channel Information Elements				
TFCS (UL DCHs)				
TFCS (DL DCHs)				
TFC subset (UL DCHs)				
TFCS (USCHs)				
TFCS (DSCHs)				
TFC subset (USCHs)				
For each uplink transport channel				
Transport channel identity				
TFS				
DRAC Information				
Dynamic Control				
Transmission Time validity				
Time duration before retry				
Silent Period duration before release				
For each downlink transport channel				
Transport channel identity				
TFS				
Physical Channel Information Elements				
Frequency info				
Uplink DPCH power control info				
SSDT Indicator				FFS
CPCH SET info				
Gated Transmission Control info				FFS
Default DPCH Offset value				
Uplink radio resource information				
Choice channel requirement				
Uplink DPCH info				
PUSCH info				
PRACH info (for RACH)				

Information Element	Presence	Multi	IE type and reference	Semantics description
PRACH info (for FAUSCH)				
Downlink Radio Resource Information				
Downlink DPCH power control info				
~~Downlink~~ DPCH compressed mode info				
Downlink Information				
Primary CCPCH Info				
Downlink DPCH info				
PDSCH info				
Secondary CCPCH info				

3GPP TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

Document R2-000198
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	171	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #7	for approval	X	Strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG2 **Date:** 17th Jan 2000

Subject: Modification of DPCH info

Work item:

Category: *(only one category Shall be marked With an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification	X		Release 99	X
				Release 00	

Reason for change:

In the current DPCH info, some of the parameters are common to all the RLs in DHO state. Therefore the common parameters are proposed not to send to the UE for each radio link to save bits and to prevent the possibility of inconsistency among the parameters for each radio link.

- "TPC combination index" is moved into "DL DPCH info for each RL".
- "Spreading factor", Fixed or Flexible Position", "TFCI existence" and "Number of bits for Pilot bits" are moved from "DL DPCH info for each RL" to "DL DPCH info common for all RLs".
- "TX Diversity Mode" is removed from "DL DPCH info for each RL" and added in each message as an option in FDD.

There is no need to modify the TDD parameters based on the assumption that TDD mode only allows 1 RL.

Clauses affected:

10.1.1 ACTIVE SET UPDATE
10.1.17 PHYSICAL CHANNEL RECONFIGURATION
10.1.22 RADIO BEARER RECONFIGURATION
10.1.25 RADIO BEARER RELEASE
10.1.28 RADIO BEARER SETUP
10.1.33 RRC CONNECTION RE-ESTABLSIHMENT
10.1.40 RRC CONNECTION SETUP
10.1.49 TRANSPORT CHANNEL RECONFIGURATION
10.2.6.9 Downlink DPCH info
10.2.6.9.XX Downlink DPCH info common for all RLs (New section is proposed)
10.2.6.41 TX Diversity Mode (FDD Only)
14.10.1 RRC Initialisation Information

Other specs Affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:

BSS test specifications → List of CRs:
O&M specifications → List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

10.1.1 ACTIVE SET UPDATE (FDD only)

NOTE: Functional description of this message to be included here

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Phy CH information elements				
Uplink radio resources				
Maximum allowed UL TX power	O			
Downlink radio resources				
Radio link addition information		0 to <MaxAddRLcount>		Radio link addition information required for each RL to add
~~>TPC combination index~~	~~M~~			
>Primary CPICH info	M			Note 1
>TFCI combining indicator	O			
>Downlink DPCH info for each RL	M			
>Secondary CCPCH Info	O			Note 2
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 2
>>Scheduling information				Note 2
Radio link removal information		0 to <MaxDelRLcount>		Radio link removal information required for each RL to remove
>Primary CPICH info	M			Note 1
SSDT indicator	O			
TX Diversity Mode	O			
Gated Transmission Control Info	O			

Multi bound	Explanation
MaxAddRLcount	Maximum number of radio links which can be added
MaxDelRLcount	Maximum number of radio links which can be removed/deleted
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

NOTE 1: If it is assumed that primary CPICH downlink scrambling code is always allocated with sufficient reuse distances, primary CPICH downlink scrambling code will be enough for designating the different radio links.

NOTE 2: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.17 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
Phy CH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink DPCH info common for all RL	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
~~>>>TPC combination index~~	~~C ifDPCH~~			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info for each RL	O			
>Secondary CCPCH info	O			For FACH/PCH
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE mode				
~~>TDD~~				
~~>>PICH info~~				
~~>>Uplink Timing Advance~~	~~O~~			
~~>>PUSCH power control info~~	~~O~~			
>FDD				
>>SSDT indicator	O			
>>TX Diversity Mode	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>PICH info				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only included in the sent message when using RACH/FACH
~~*If DPCH*~~	~~This IE is only sent if IE "Downlink DPCH info" is present~~

Multi Bound	Explanation
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH
MaxRLcount	Maximum number of radio links to be set up

CHOICE *channel requirement*	Condition under which the given *channel requirement* is chosen
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.22 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink DPCH info common for all RL	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
~~>>>TPC combination index~~	~~C-ifDPCH~~			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info for each RL	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>TX Diversity Mode	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
~~*IfDPCH*~~	~~This IE is only sent if IE "Downlink DPCH info" is present~~

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

CHOICE *RLC info type*	**Condition under which the given *RLC info type* is chosen**
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.25 RADIO BEARER RELEASE

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH info common for all RL	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
~~>>>TPC combination index~~	~~C ifDPCH~~			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info for each RL	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>Scheduling information				Note 3
Choice *mode*				
>FDD				
>>SSDT indicator	O			
>>TX Diversity Mode	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O, FFS			Note 3
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
~~*IfDPCH*~~	~~This IE is only sent if IE "Downlink DPCH info" is present~~

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelRBcount	Maximum number of RBs to be released
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH
MaxReconAddFFSTrCH	Maximum number of transport channels to add and reconfigure

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH Info (for RACH)	
PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.28 RADIO BEARER SETUP

NOTE: Functional description of this message to be included here

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH Info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink DPCH info common for all RL	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
~~>>>TPC combination index~~	~~ifDPCH~~			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info for each RL	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>TX Diversity Mode	O			
>>CPCH SET Info	O			
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
~~*If DPCH*~~	~~This IE is only sent if "Downlink DPCH info" is present~~

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddcount	Maximum number of Transport CHannels reconfigured or added
MaxRBcount	Maximum number of RBs that could be setup with this message
MaxOtherRBcount	Maximum number of Other RBs (i.e., RBs not being released) affected by the procedure
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for FAUSCH)	
PRACH info (for RACH)	

CHOICE *RLC info type*	**Condition under which the given *RLC info type* is chosen**
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3: The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.1.33 RRC CONNECTION RE-ESTABLISHMENT

NOTE: Functional description of this message to be included here

RLC-SAP: UM

Logical channel: CCCH, DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink DPCH info common for all RL	O			
Downlink information per radio link		0 to <Max RIcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
~~>>>TPC combination index~~	~~C-ifDPCH~~			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info for each RL	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>TX Diversity Mode	O			
>>CPCH SET info	O			UL/DL radio resource for CPCH control (Note3)
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 3: How to map UL and DL radio resource in the message is FFS.

Condition	Explanation
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
RBsetup	This information element is only sent when RB information to setup exists
~~*IfDPCH*~~	~~This IE is only sent if IE "Downlink DPCH info" is present~~

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive
Signalling radio bearer type	

Multi Bound	Explanation
MaxNoCN domains	Maximum number of CN domains
MaxSetupRBcount	Maximum number of RBs to be setup
MaxRelRBcount	Maximum number of RBs to be released
MaxReconRBcount	Maximum number of RBs to be reconfigured
MaxDelTrCHcount	Maximum number of Transport CHannels to be removed
MaxReconAddTrCH	Maximum number of transport channels to add and reconfigure
MaxRLcount	Maximum number of radio links

10.1.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for an UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink DPCH info common for all RL	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link to be set-up
>CHOICE *mode*				
>>FDD				
~~>>>TPC combination index~~	~~C-ifDPCH~~			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info for each RL	O			
>Secondary CCPCH info	O			
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>TX Diversity Mode	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note 1)
>>Gated Transmission Control info	O, FFS			Note 2
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
IfTM_DCH	This information is only sent if a DCH carrying transparent mode DCCH information is used, e.g. to send transport format combination commands.
~~*IfDPCH*~~	~~This IE is only sent if IE "Downlink DPCH info" is present~~

Multi Bound	Explanation
MaxULTrCHCoun	Maximum number of new uplink transport channels
MaxDLTrCHCount	Maximum number of new downlink transport channels
MaxRLcoun	Maximum number of radio links to be set up

CHOICE channel requirement	Condition under which the given channel requirement is chosen
Uplink DPCH info	
PRACH info (for RACH)	

CHOICE RLC info type	Condition under which the given RLC info type is chosen
RLC info	Allowed when the value of IE "RB identity" is between 0 and 31, inclusive.

NOTE 1: How to map UL and DL radio resource in the message is FFS.

NOTE 2: The activation time should be present when the Gated Transmission control info is present in this message.

10.1.49 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element	Presence	Multi	IE type and reference	Semantics description
PhyCH information elements				
Frequency info	O			
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info	O			
CHOICE channel requirement	O			
>Uplink DPCH info				
>PRACH info (for RACH)				
>CHOICE *mode*				
>>FDD				
>>>PRACH info (for FAUSCH)				
Downlink radio resources				
Downlink DPCH power control info	O			
Downlink DPCH info common for all RL	O			
Downlink information per radio link		0 to <Max RLcount>		Send downlink information for each radio link
>CHOICE *mode*				
>>FDD				
~~>>>TPC combination index~~	~~C ifDPCH~~			
>>>Primary CPICH info				
>>TDD				
>>>Primary CCPCH info	O			
>Downlink DPCH info for each RL	O			
>Secondary CCPCH info	O			
>References to system information blocks		0 to <MaxSysInfoBlockFACHCount>		Note 3
>>Scheduling information				Note 3
CHOICE *mode*				
>FDD				
>>SSDT indicator	O			
>>TX Diversity Mode	O			
>>CPCH SET Info	O			UL/DL radio resource for CPCH control (Note2)
>>Gated Transmission Control info	O			
>>Default DPCH Offset Value	O			
>>Downlink DPCH compressed mode info	O			
>>PDSCH with SHO DCH Info	O			
>>PDSCH code mapping	O			
>TDD				
>>Uplink Timing Advance	O			
>>PUSCH power control info	O			

Condition	Explanation
RACH/FACH	This information element is only sent when using RACH/FACH
DRAC	These information elements are only sent for transport channels which use the DRAC procedure
~~*IfDPCH*~~	~~This IE is only sent if IE "Downlink DPCH info" is present~~

Multi Bound	Explanation
MaxRLcount	Maximum number of radio links to be set up
MaxReconcount	Maximum number of Transport Channels reconfigured
MaxReconTrCHDRAC	Maximum number of Transport CHannels which are controlled by DRAC and which are reconfigured
MaxSysInfoFACHCount	Maximum number of references to system information blocks on the FACH

CHOICE *channel requirement*	**Condition under which the given *channel requirement* is chosen**
Uplink DPCH info	
PRACH info (for RACH)	
PRACH info (for FAUSCH)	

NOTE 1: Necessity of PLMN is FFS and for CN domain identity and NAS system information, the confirmation in SA WG2 is needed.

NOTE 2: How to map UL and DL radio resource in the message is FFS.

NOTE 3 The Secondary CCPCH info and the references to SIB are present when the UE needs to listen to system information on FACH.

10.2.6.9 Downlink DPCH info for each RL

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
CHOICE *mode*				
>FDD				
>>DL channelisation code		1 to <maxChan count>		SF of the channelisation code of the data part for each DPCH
>>>Secondary scrambling code	O		Integer (0..14)	
~~>>>Spreading factor~~	~~M~~		~~Enumerated(4, 16, 32, 64, 128, 256, 512)~~	
>>>Code number	M		Integer(0..maxCodeNum)	
~~>>Fixed or Flexible Position~~	~~M~~		~~Enumerated (Fixed, Flexible)~~	
~~>>TFCI existence~~	~~M~~		~~Boolean~~	
~~>>Number of bits for Pilot bits~~	~~C-SF~~		~~Enumerated (2,4,8 bits)~~	
~~>>TX Diversity Mode~~	~~M~~			
>>TPC combination Index	M			
>>SSDT Cell Id	O			
>TDD				
>>Activation Time	O		Integer (0...255)	Frame number start of allocation period. Default is activation time in UE information elements.
>>Duration	O		Integer (0...255)	Total number of frames. Default = 0 (for infinite)
>>TFCI coding	O		Enumerated(4,8,16,32)	Describes the way the TFCI bits are coded. Default: 1 TFCI bit coded with 4 bits. 2 TFCI bits coded with 8 bits. 3-5 TFCI bits coded with 16 bits. 6-10 TFCI bits coded with 32 bits.
>>Puncturing Limit	M			
>>Repetition period	O		Integer (1 ... Repetition period -1)	Repetition period of the DPCHs. Default value is 1.
>>Repetition length	O			Length of the allocation for each repetition period. Default value is 1.
>>Individual Timeslot info		1 to < max Timeslot count>		The first instance of the parameter Individual Timeslot Info corresponds to the timeslot that shall be used first by the physical layer, the second to the timeslot that shall be used second and so on.

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
>>>channelisation code		1 to <max Codes count>	Enumerated ((1/1), (2/1), (2/2), (4/1)...(4/4), (8/1)...(8/8), (16/1)...(16/16))	The first instance of the parameter Channelisation code corresponds to the first DPCH in that timeslot that shall be used first by the physical layer, the second to the DPCH in that timeslot that shall be used second and so on.
>>>Timeslot	M		Integer (0...14)	Timeslot within a frame.
>>>TFCI presence	O		Boolean	If TFCI exists it shall be coded in the first DPCH in this timeslot. Default value is No TFCI.
>>>Burst type	O		Enumerated (Typ1, Typ2)	Short or long midamble for this timeslot. Default is burst type 1.
>>>Midamble shift	O		Integer (0...MaxMidambleShift – 1)	Midamble shift for this timeslot. Default is set by layer 1

Condition	Explanation
~~*STTD*~~	~~This IE is only sent if STTD is applied~~
~~*SF*~~	~~This IE is only sent if SF=128 or 256 is applied.~~ ~~If SF=256, value is 2,4 or 8~~ ~~If SF=128, value is 4 or 8~~

Range Bound	Explanation
MaxChancount	Maximum number of channelisation codes used for DL DPCH
MaxCodeNum	Maximum number of codes for one spreading factor (SF) is equal to SF-1.
MaxTimeslotcount	Maximum number of timeslots used for DPCHs
MaxCodesCount	Maximum number of codes for one timeslots
MaxMidambleShift	Maximum number of Midamble Shifts

10.2.6.9.X.X Downlink DPCH info common for all RL

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
>>>Spreading factor	M		Enumerated(4, 16, 32, 64, 128, 256, 512)	
>>Fixed or Flexible Position	M		Enumerated (Fixed, Flexible)	
>>TFCI existence	M		Boolean	
>>Number of bits for Pilot bits	C-SF		Enumerated (2,4,8 bits)	

Condition	Explanation
SF	This IE is only sent if SF=128 or 256 is applied. If SF=256, value is 2,4 or 8 If SF=128, value is 4 or 8

10.2.6.41 TX Diversity Mode (FDD only)

Information Element/Group name	Presence	Range	IE type and reference	Semantics description
Mode	M		Enumerated (none, STTD, closed loop mode1, closed loop mode2)	~~Associated with DL DPCH info (but not for each RL)~~

~~NOTE: These parameters shall be set optinally associated with DL DPCH info but not for each RL.~~

14.10 Provision and reception of RRC Initialisation Information between RNCs

When relocation of SRNS is decided to be executed, the RRC shall build the state information, which contains the RRC, RLC and MAC related RRC message information elements, which currently specify the state of the RRC. This RRC INITIALISATION INFORMATION shall be sent by the source RNC to the target RNC to enable transparent relocation of the RRC and lower layer protocols. Correspondingly, the RRC in the target RNC shall receive the RRC INITIALISATION INFORMATION and update its state parameters accordingly to facilitate a transparent relocation of SRNS for the UE.

14.10.1 RRC Initialisation Information

Information Element	Presence	Multi	IE type and reference	Semantics description
Physical Channel Information Elements				
Frequency info				
Uplink radio resources				
Maximum allowed UL TX power	O			
Uplink DPCH power control info				
~~SSDT Indicator~~				~~FFS~~
~~CPCH SET info~~				
~~Gated Transmission Control info~~				~~FFS~~
~~Default DPCH Offset value~~				
~~**Uplink radio resource information**~~				
Choice channel requirement				
>Uplink DPCH info				
>PUSCH info				
>PRACH info (for RACH)				
>PRACH info (for FAUSCH)				
Downlink Radio Resource ~~Information~~				
Downlink DPCH power control info				
Downlink DPCH info common for all RL				
~~Downlink DPCH compressed mode info~~				
Downlink information per radio link				
~~**Downlink Information**~~				
Primary ~~CCPCH~~ CPICH Info				
Downlink DPCH info for each RL				
PDSCH info				
Secondary CCPCH info				
SSDT Indicator				
Tx Diversity Mode				
Gated Transmission Control info				
Default DPCH Offset value				
Downlink DPCH compressed mode info				